

# STORMWATER DEPARTMENT INTERIM FUNDING STRATEGY IMPLEMENTATION UPDATE

CITY OF SAN DIEGO STORMWATER DEPARTMENT





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### INTRODUCTION

The Stormwater Department Interim Funding Strategy Implementation Update, November 2021 (the "November Interim Funding Strategy Implementation Update") provides updates on the state of stormwater midway through Fiscal Year (FY) 2022 and on select implementation actions identified in the Stormwater Funding Strategy (the "Funding Strategy"). The Stormwater Department (SWD) presented the Funding Strategy to City Council in February 2021 in response to Recommendation #5 of the June 2018 performance audit of the SWD by the Office of the City Auditor titled The Storm Water Division Can Further Improve the Efficiency of Its Infrastructure Maintenance and Code Enforcement Efforts, but the City Ultimately Needs to Address Significant Storm Water Funding Shortages² (the "Audit"). An interim update on Funding Strategy implementation was provided to Environment Committee in July 2021 (the "July Interim Funding Strategy Implementation Update").

This November Interim Funding Strategy Implementation Update focuses on the following key themes:

- The mounting challenges facing the SWD, with a focus on the challenges that are continuing to grow at an alarming pace, impacting local water quality and the safety of San Diego's infrastructure, including roads and buildings (Appendix A: Think Blue Fact Sheet and Appendix B: Environmental Water Quality and Community Flood Assessment Fact Sheets<sup>4</sup>)
- Stormwater funding needs continue to grow, reflecting the impacts of deferred capital investments, deferred maintenance, emergency failure costs, and increased costs for long-term compliance with water quality regulations
- Stormwater funding has failed to keep pace with needs even though the SWD continues to pursue funding and financing opportunities (Appendix C: Funding Strategy Implementation Actions Update)
- A dedicated stormwater funding source is necessary and is continuing to be assessed to meet stormwater program goals (Appendix D)
- Public opinion research findings affirm that ongoing education is critical to improving residents' understanding of the stormwater system and SWD services and that additional funding is perceived to be needed for stormwater (Appendix E: Public Opinion Research Findings)
- Stormwater education and outreach has continued to ramp up as part of the Think Blue San Diego: Clean Water, Clean Beaches relaunch

This document serves both as a summary of the mounting challenges facing the SWD as well as an update on select components of Funding Strategy implementation.

<sup>1</sup> City of San Diego. 2021. *Stormwater Division Funding Strategy January 2021*. Stormwater Division. <u>Stormwater Funding Strategy Report.pdf</u> (sandiego.gov)

<sup>2</sup> City of San Diego. 2018. *Performance Audit of the Storm Water Division*. Office of the City Auditor. <a href="https://www.sandiego.gov/sites/default/files/18-023">https://www.sandiego.gov/sites/default/files/18-023</a> storm water division 0.pdf

<sup>3</sup> City of San Diego. 2021. Stormwater Department Interim Funding Strategy Implementation Update. Stormwater Department. Stormwater Funding Strategy Report - July 2021.pdf (sandiego.gov)

<sup>4</sup> The Environmental Water Quality Fact Sheets provide summaries that are current as of October 2021. The Community Flood Assessment Fact Sheets provide summaries that were current as of December 2020.

# STORMWATER CHALLENGES ARE MOUNTING AT A RAPID PACE

The SWD is responsible for protecting local streams, rivers, bays, and beaches from pollution and for building, operating, and maintaining the City's vast, integrated stormwater system that includes pipes, drains, channels, green infrastructure (GI), levees and pumps. This system is comprised of many interconnected components that must function together seamlessly to provide critical services to San Diego residents and businesses. While much of the City's stormwater system is hidden underground, obscured from public view, this infrastructure system is essential to San Diegans' quality of life, health, and safety. The City's stormwater system provides multiple additional community benefits such as clean, green streets; improved mobility; walking and bike paths; green spaces; and stream and wetland revitalization. The SWD has been doing all it can with the limited funding sources currently in place, but it is simply not enough. A number of factors, including increasingly strict water quality requirements, aging and failing infrastructure, a changing climate with more extreme weather events, and urbanization, have exacerbated baseline needs.

As stormwater needs continue to be underfunded, San Diego's natural resources will continue to be adversely impacted, local water quality will decline precipitously, and the safety of basic infrastructure will be further compromised. Underfunding stormwater has been, and will continue to be, a liability for the City. Between FY2015 and FY2021, the SWD paid out \$18.7 million (623 claims) for stormwater-related issues like damage to property and automobiles due to flooding, failing and broken infrastructure that led to adverse impacts to health/property, and cleanup costs (Figure 1). In addition, opportunities to invest in multi-benefit stormwater projects that can capture stormwater for use, improve water quality, and provide community benefits, especially in underserved communities, will continue to be missed.



Figure 1. Erosion and mudslide during a 2020 rain event due to a stormwater pipe failure near Interstate 163.

# STORMWATER FAILURES THREATEN PUBLIC SAFETY

Often hidden from sight, the stormwater system runs throughout the City, under streets, along homes and businesses, near critical infrastructure like hospitals and fire stations, and within public areas like parks, schools, libraries and recreation areas. Some components of the stormwater system, which includes pipes, channels, pumps stations, inlets, and levees, are over 100 years old. Like all infrastructure, the system has aged and deteriorated. However, the stormwater system is also subject to the added wear and tear from extreme and violent rainfall events from climate change causing harmful flows, expansive urbanization generating increasing runoff, and historical underfunding resulting in deferred maintenance. These issues have turned from a moderate inflow of failures into a deluge of need. The impacts of these failures in San Diego communities are felt not only when it rains, but year-round as they can cause sinkholes, erosion along coastlines, and pollution backing up into streets and alleys (Figure 2).



Figure 2. Sinkholes, like this one shown on Mississippi Street in April 2021, are caused when stormwater pipes fail and collapse, creating unsafe conditions on the surface.

The City currently has nearly 2,000 known stormwater infrastructure failures, with 32 failures considered emergencies due to their imminent risk to life or property. Emergencies are not predictable and require that a portion of the limited funding available to the SWD is diverted to address them, which has resulted in nearly 40% of current capital projects (e.g., water quality, green infrastructure, and flood resilience projects) initiated by SWD to be put on hold. In the last three years (FY2019 – FY2021) emergencies have required nearly \$65 million to address, mostly funded through reallocation from other priority projects. Other high risk active failures, which are those considered to have a high probability of progressing to an emergency and also have a high likelihood of widespread damage or health and safety risks as assessed in the Watershed Area Management Plan (WAMP), total over \$132 million in current backlog. Each year, additional high-risk failures occur, exacerbating the backlog and number of safety concerns. During that time, known failures that are considered "moderate" or "low" priority (but still failures) are likely to elevate and would require attention while new, and necessary, water quality and water supply projects would continue to be deferred.

### **Example: Pump Stations in Mission Beach**

Three pump stations in Mission Beach are among newly active failures that have been deemed dangerous for entry and/or operation due to unsafe conditions. These pump stations remove water from the densely-populated, low-lying area during rainstorms and have the potential to impact over 162 acres of critical San Diego residential and commercial areas with flooding and polluted waters during the upcoming rainy season if not addressed.



Figure 3. Location of failed pump stations in Mission Beach and potential flood impact area.

### **Example: Pipe Failure Locations**

In March 2020, the SWD was still deploying 26 by-pass pumps that were staffed 24 hours a day during Storm Patrol activities. By strategically prioritizing pipe repairs and replacements at those locations, the SWD was able to reduce the number of active by-pass locations from 17 to four by the end of FY2021, and as of October 2021, this was further reduced down to one. However, there are many more pipe locations that are at risk of failing and causing flooding each year. This was most recently observed on September 24, 2021, when a short but intense rainfall event resulted in over 30 stormwater hotline calls due to flooding and associated impacts.

Other examples of failures that rise to health and safety concerns when left unaddressed include:

- A pipe failure that has been a known issue since 2017 but has been unaddressed due to funding limitations. This same pipe location resulted in a mudslide into an apartment complex property, requiring critical resources to be diverted to cleanup. Additional residential locations in the area experienced flooding.
- A segment of pipeline that has experienced multiple failures within a five-year period along the same street due to needing to use a "spot repair" approach at each failure location as a result of funding constraints. This approach has led to two different sinkholes along the same stretch of road, creating repetitive health and safety concerns for the same community in a short duration of time.

The bottom line is the SWD needs to transition from being solely reactive to high-risk failures to performing proactive repair and rehabilitation to improve the stormwater system before dire consequences occur.



Figure 4. The SWD repairs and replaces pipes for known failures in order to reduce flooding risk.

### **Example: Channel Maintenance Program**

Over 69.2 miles of priority channels (or 200 channel segments) run throughout the City, conveying water through earthen and/or concrete conduits in critical areas. The City has an extensive channel inspection process each year to assess the condition of these massive pieces of infrastructure since they are critical to safely conveying floodwaters away from homes and businesses. Due to funding limitations, nearly all City channels are overdue for routine maintenance, which includes clearing invasive vegetation, repairing damaged infrastructure, and removing accumulated sediment with pollution and trash. In FY2021, the City conducted maintenance on only four of the 200 channel segments. According to planning estimates, this leaves a large backlog of channels overdue for routine maintenance with an estimated cost of \$95.5 million in 2022 dollars. If these channels continue to be neglected, the risk of flooding, property damage, erosion, and transport of toxic pollution to downstream waters will continue to increase.



Figure 5. Pollution, trash, and dumping of large items like cars, as shown here in the Chollas Creek Watershed near Euclid Avenue and State Route 94, poses a threat to health and safety by obstructing the flow of water in channels when it rains and also acting as a source of localized and downstream pollution.

# POLLUTION IS THREATENING SAN DIEGANS' WAY OF LIFE

In San Diego, waterways are the arteries that connect the City and are central to local parks, hiking and biking trails, beaches, and other recreational areas. San Diego is also home to expanses of native and preserved habitat areas that support diverse ecosystems, plants, and animals. As water flows through streets, gutters and storm drains, it picks up toxins and trash and then goes directly, untreated, into local creeks and rivers and eventually into bays, lagoons, and coastal waters. The pollution and trash picked up and transported by stormwater can be toxic, even in small amounts, and it is transported and deposited in the waterways that connect San Diego's inland areas, residential neighborhoods, urban centers, and coastal shores. Pollution can cause unsafe conditions for swimming, fishing, and recreating in waters themselves, as well as cause degradation and deterioration of the many parks, preserves, trails, and coastlines that are used and visited by millions each year. Between 2000 and 2020, there were an average of 55 beach closures per year and 586 beach advisories per year due to poor water quality (Figure 6). Pollution and trash do not only impact humans – marine life and the diverse local ecosystems throughout San Diego are also at risk if water quality standards are not met.



Figure 6. Beach closures along San Diego's coastlines often result from unsafe levels of pollution.

# WATER QUALITY IN WATERWAYS IS FALLING SHORT OF STANDARDS

The City's commitment to clean waterways has added an important dimension to the services provided by the San Diego stormwater system. The system was originally built to move stormwater and address flood risk. Increased and evolving clean water regulations have enormously expanded SWD responsibilities and attendant costs. Nearly all the City's rivers and streams are considered impaired under the federal Clean Water Act, and over 99% of the City drains to, and therefore contributes to, an impaired water body (Figure 7). The latest data being evaluated for 2022 are expected to add 101 new impairments in San Diego water bodies.

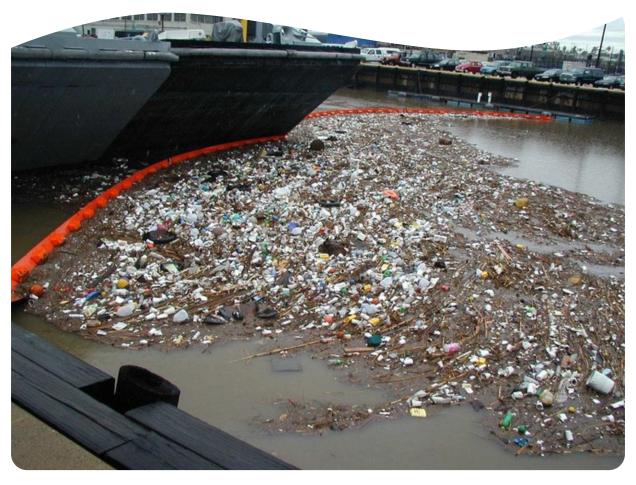


Figure 7. Trash and pollution cause water bodies like rivers, lakes, streams, bays, and the Pacific Ocean to be considered impaired by Clean Water Act standards, as shown here at the mouth of Chollas Creek.

The dramatic increase in regulatory requirements over time is reflected in the fact that the most significant cause of the increased and growing need for SWD funding is related to addressing water quality and providing clean water (approximately \$246 million per year in need, or 73% of the total funding need, Figure 8). The City is committed to protecting water quality, addressing sources of contamination, and investing in keeping waters and neighborhoods clean and safe; however, with each year of limited funding, the City is falling further and further behind.

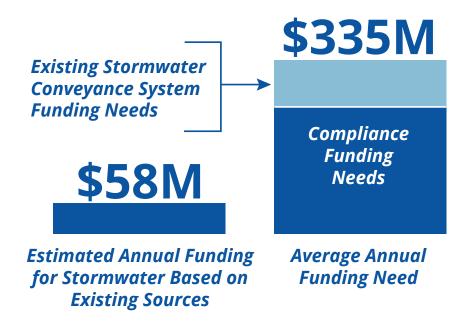


Figure 8. The funding need to address regulatory requirements for water quality account for 73% of the total average annual funding need.

The City has three significant compliance deadlines coming up in the next 10 years, for which the City is not on track. The issue is not with innovative and efficient ideas, it is with the funding to execute. Failure to meet these standards may result in hefty fines and penalties levied by state and federal agencies that can range between \$10,000 and \$65,800 a day *per violation*. Additionally, third party lawsuits that hold the City liable for compliance violations are also a risk.

The following examples underscore the water quality issues that plague San Diego's waterways.

### **Example: Bacteria Regulatory Requirements**

Harmful bacteria that pose a risk to human health and water quality are often carried through the stormwater system. In April 2021, the final dry weather milestone for a major water quality requirement – the bacteria total maximum daily load [TMDL] – passed. A number of locations throughout the City were not in compliance with that standard. Any exceedances of the TMDL after this deadline could likely result in violations and corresponding enforcement actions or monetary fines by the San Diego Regional Water Quality Control Board and/or third parties as soon as they are reported. To date, the SWD has been able to fund few of the implementation actions necessary to address any exceedances. The SWD has organized a multidisciplinary tactical team that has cutting-edge technology to identify and track sources of harmful bacteria that pose human health and water quality risks throughout the City. The SWD has a Water Quality Response Team that conducts enforcement activities in an effort to improve water quality. The Water Quality Response Team is developing an adaptive management dashboard to help them visualize and assess trends in monitoring data and locations of concern. However, many areas are left unaddressed due to funding limitations, thereby contributing to continued exceedances and greater risk to public health, and leaving the City at risk of failing to achieve compliance.



Figure 9. Staff are proactively tracking and addressing sources of harmful bacteria before they enter our storm drains and are washed out to our bays, lagoons, and coastal waters, as shown cleaning up a sewage spill by Jefferson Street and Conde Street.

### **Example: Proactive Patrols in Famosa Slough**

Famosa Slough (Slough) is a 37-acre wetland area that contains sensitive habitat areas near where the San Diego River meets the Pacific Ocean (Figure 10) and is one of the impaired waters in the City. In addition, the numerous beach segments that do not mean Clean Water Act Standards include nearly all the City's rivers, streams, bays, and beaches. The SWD has conducted focused education and outreach with the local community and businesses to raise awareness about the sensitivity of the Slough and how to reduce the impact of pollution and trash on the sensitive wetland area. The SWD has also completed successful proactive weekly inspections in the surrounding community to detect and eliminate irrigation runoff or overwatering that may be causing pollutants to be washed into the Slough during dry weather. This is a key step in restoring the health of the Slough and preventing harmful environmental conditions. However, insufficient funding is available to conduct these proactive patrols across other watersheds that continue to leave other portions of the City vulnerable to unsafe levels of harmful pollution.





Figure 10. Famosa Slough supports sensitive habitat areas.

# THE COST OF MANAGING STORMWATER CONTINUES TO RISE

As stormwater needs continue to accumulate and escalate, so do the associated costs, often at a higher rate to prevent catastrophic fallout from failure, resulting in a projected average annual funding need of \$335 million per year over the 20-year planning horizon of FY2022 to FY2041. The Funding Strategy, which was presented to City Council in February 2021, characterized the average annual stormwater funding need for the period of FY2021 to FY2040 as \$274 million per year in 2020 dollars. Since the original Funding Strategy projection was developed, a number of factors have changed:

- Additional failures have occurred and unfunded needs have been carried over from previous years, including unfunded needs caused by diverting funding from planned projects to emergency failures
- Updated projections from 2020 dollars to 2022 dollars<sup>5</sup>
- Updated forecast period to extend 20 years through FY2041

Figure 11 presents the updated stormwater funding need by operations and maintenance (O&M) and capital improvement program (CIP) costs and shows the continued deferment of needs into FY2023 due to underfunding from previous years.

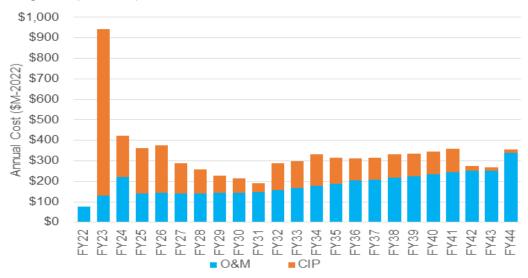


Figure 11. Updated stormwater O&M and CIP funding needs with FY2022 funded components (all in 2022 dollars).

SWD funding needs continue to be rolled over to subsequent years as funding continues to fall short, creating an extreme peak in need of critical infrastructure and clean water investments that are falling further behind. This is demonstrated by the peak in FY2023 shown in Figure 11, which includes the deferred need from previous years.

<sup>5</sup> City salaries updated to 2022 levels to increase O&M costs to reflect 2022 dollars. CIP costs escalated using actual Engineering News Record (ENR) Construction Cost Index (CCI) changes from July 2020 to July 2021 of 6.98% to escalate from the beginning of FY2020 to FY2021 CIP costs escalated from 2021 to 2022 dollars based on the long-term average ENR CCI of 3.0%.

# STORMWATER FUNDING HAS NOT KEPT PACE

Over the past six years, stormwater funding in general has remained relatively constant, or decreased slightly, as the funding need and acceleration of failures and liabilities has increased. Figure 12 presents a summary of annual funding from FY2016 through FY2021 and the approved budget amount for FY2022. The primary source of funding has been the City General Fund, varying from a high of \$51 million in FY2017 to a low of \$36 million in FY2021. The FY2021 low is partly due to Citywide budget cuts associated with the COVID-19 pandemic. In FY2022, City General Fund contributions have largely rebounded to pre-pandemic levels; however, they have not increased to a sufficient level to meet SWD needs.

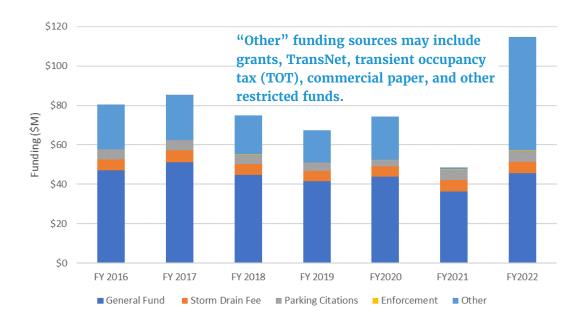


Figure 12. Historical and current FY2022 stormwater funding by funding source

The SWD generates a limited amount of revenue through three sources: (1) revenue from an existing storm drain fee, (2) parking citations from the street sweeping program, and (3) fines from stormwater enforcement. While each of these funding sources has historically been allocated to the SWD, they are legally unrestricted and are subject to City discretion as part of the annual budget process. Other ancillary funding sources that have historically varied annually include grants, TransNet, transient occupancy tax (TOT), commercial paper, and other restricted funds (e.g., the Parking Meter District Fund). In FY2022, those other ancillary funding sources include \$1.0 million from TransNet, \$1.0 million from Development Impact Fees, \$5.98 million from a U.S. Department of Commerce Economic Development Administration (EDA) grant, and approximately \$48.6 million from a Commercial Paper issuance to be repaid by the General Fund. The total SWD budget for FY2022 is \$114.8 million, of which approximately \$58.2 million is anticipated to continue into future years and is not provided through one-time funding sources (e.g., commercial paper, DIF, EDA grant).

# THE STORMWATER FUNDING GAP CONTINUES TO GROW

The increase in stormwater funding needs coupled with funding levels that are insufficient to address the continually mounting backlog of deferred needs results in an ever-increasing stormwater funding gap. Currently, the stormwater funding gap is approximately \$274 million dollars per year in 2022 dollars (Figure 13).

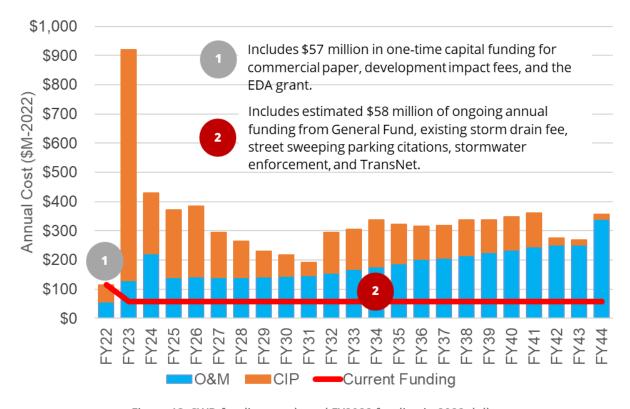


Figure 13. SWD funding needs and FY2022 funding in 2022 dollars.

# THE STORMWATER DEPARTMENT HAS CONTINUED TO PURSUE FUNDING AND FINANCING OPPORTUNITIES

The SWD has continued to assess funding and financing opportunities within the four broad implementation action categories identified in the Funding Strategy:

- I. Maximize and accelerate implementation of efficiencies;
- II. Increase investment in SWD program innovation;
- III. Maximize existing funding sources, grants, and loans; and
- IV. Pursue development of a long-term dedicated funding mechanism.

A comprehensive update for each of the implementation actions is included in Appendix C with progress to date and a lookahead through FY2023. Select funding implementation actions with notable progress in FY2022 are presented herein, noting that many implementation actions are ongoing and may not have a significant milestone prior to the November 2021 Environment Committee update.

- Additional pipe-repair team: An additional in-house pipe-repair team was prioritized to be funded in FY2022 to accelerate the pace of more efficient and timely repairs for failing pipes. In-house pipe repairs cost approximately 57% less and are 80% faster (1-year versus 5-year planning, design, and construction process) than using external contractors. A dedicated pipe-repair crew of 25 full-time employees is being hired and onboarded in Q2 FY2022.
- Stormwater harvesting and reuse: In partnership with the Public Utilities Department (PUD), the SWD has continued the investigation of opportunities to integrate stormwater capture activities to achieve both water quality and water supply goals through stormwater harvesting. In Q1 FY2022, the SWD identified 14 potential locations for diversion of dry and/or wet weather flows to the Pure Water system that could capture up to 8.6 million gallons per day (MGD) in total. Of those 14 projects, the Carroll Canyon Creek Dry Weather Flow Diversion project has been advanced to CIP. This project would be the first full–scale example of strategic runoff harvesting coordinated with Pure Water and will enable the City to further explore the Citywide viability of this technology. The project will capture local runoff and help to restore sensitive habitat in the downstream Los Peñasquitos Lagoon. Other stormwater harvesting efforts are underway (see Appendix C) and will be completed by the end of FY2022.
- Cost recovery options: In FY2022, the SWD has continued to assess and refine approaches for cost recovery funding options, including (1) revising the monetary penalties matrix for stormwater enforcement and fines, (2) developing a Stormwater Inspection and Reinspection Fee Program, and (3) assessing options to modify the street sweeping parking enforcement/fine

program. Ongoing coordination with other City Departments and alignment with the City's User Fee Process will continue through FY2022.

- Grants: In FY2021, the SWD applied for 11 grants for four projects totaling \$34.1 million in requested funding. All 11 applications were unsuccessful. SWD staff have debriefed with the grant administering agencies on application competitiveness and adjustments that could be made in the future, which will be included in future applications as appropriate. The SWD was recently awarded a grant in FY2020 by the U.S. Department of Commerce's EDA for \$6.0 million for the Maple Canyon Restoration Project. In FY2022, the SWD is currently assessing six grants totaling \$20.4 million to consider for application. The SWD will continue to work with Government Affairs to identify and assess upcoming grant and loan opportunities that are emerging from recent State and Federal legislative actions, often with a focus on climate resiliency and drought preparedness.
- State Budget Allocation: The Southcrest Green Infrastructure Project has been identified in the Statewide Budget to receive an appropriation of \$3.1 million by the Department of Parks and Recreation to treat stormwater runoff entering Chollas Creek.
- Water Infrastructure Finance and Innovation Act (WIFIA): The SWD submitted a Letter of Interest for a WIFIA loan for high-risk pipe replacements, GI, revitalization and restoration of natural waterways, pump station upgrades, and rehabilitation of stormwater features. The subsequent loan application was submitted at the end of FY2021 for a loan amount of \$294 million, with the City matching 51% (or \$306 million). The City has been engaged in negotiations with the U.S. Environmental Protection Agency regarding loan specifics with loan execution potentially taking up to a year. The earliest that WIFIA funding is anticipated to be available to the SWD is late FY2022 or early FY2023.
- Clean Water State Revolving Fund (CWSRF): The SWD applied for CWSRF loans for the South Mission Beach Storm Drain Improvements and Green Infrastructure project and the Los Peñasquitos Lagoon Restoration project in FY2020 and FY2019, respectively. Both projects were placed on the CWSRF Intended Use Plan. The South Mission Beach Storm Drain Improvements and Green Infrastructure project received City Council approval in an amount of \$27 million in FY2021. The SWD is planning to enter into a CWSRF loan pending City Council approval and successful negotiation of a loan agreement with the State Water Resources Control Board (SWRCB) for the Los Peñasquitos Lagoon Restoration project (\$27 million). The SWD is also continuing to explore additional CWSRF loan applications for large projects that protect natural waterways and anticipates submitting an application to finance various projects in December 2021.

For each of these potential funding and financing options, the SWD is actively coordinating with other City Departments (Engineering and Capital Projects, Department of Finance, Debt Management, among others) to be prepared to ramp up execution of the program, if and when the funding becomes available.

# A LONG-TERM STORMWATER FUNDING MECHANISM IS NEEDED

In alignment with both Recommendation #6 and Council Resolution R-2021-306, the SWD is evaluating the viability of a dedicated stormwater funding mechanism. The SWD has made progress on each of the five integrated elements necessary for a stormwater funding measure, which were identified through extensive benchmarking of stormwater ballot measures in the Funding Strategy (Figure 14).

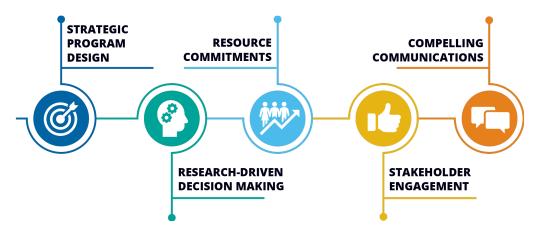


Figure 14. Integrated elements for stormwater funding measure development.

This section summarizes progress to date in FY2022 on each of these elements.

- Strategic program design, including draft funding measure considerations and refined funding mechanism scenarios.
- Research-driven decision-making informed by an additional survey in August 2021 that builds from the FY2021 surveys (December 2020 and March 2021) and focus groups in May 2021.
- Resource commitments of staffing and funding in FY2022 to develop a technically robust program and educate the public.
- Engagement with stakeholders on the importance and status of stormwater issues.
- Compelling communications to support an informed and educated San Diego on topics related to stormwater, including the relaunch of Think Blue San Diego.

<sup>6</sup> City of San Diego. 2021. Stormwater Funding Strategy. <u>www.fundingstrategy.thinkblue.org</u>

### **Funding Measure Design**

The SWD has continued assessment and refinement of a potential stormwater funding measure in close coordination with the Office of the City Attorney, Department of Finance, City Treasurer, Debt Management, Department of Information Technology, Department of Engineering & Capital Projects, Public Utilities Department, Mayor's Office, County Assessor's Office, and other stakeholder groups. A summary of initial stormwater funding measure considerations is presented in Appendix D.

Elements of a potential funding measure for consideration include:

- **Proposition 218 voter requirements shall be followed** to minimize the risk of a legal challenge, as reported in the July 2021 Funding Strategy Implementation Update and the City Attorney review of Senate Bill (SB) 231 and Assembly Bill (AB) 2403.<sup>7</sup>
- The funding mechanism could be a special parcel tax, which would levy a tax on each applicable parcel and would be limited for use.
- An impermeable area basis could be applied, which uses a rate per square foot (SF) of impermeable area on a parcel or a subdivision of a parcel where there are stacked units (e.g., apartments and condominiums) (see additional discussion below in Funding Mechanism Scenarios section).8
- Frame the Potential Funding Measure Around Program Goals, which have been drafted in coordination with other City entities, community groups, and stakeholders to reflect the vision for a stormwater system for all San Diegans' benefit in which (1) innovation and efficiency are the backbone of the approach to clean water and flood control; (2) infrastructure adapts to meet the needs of a growing population and changing climate to ensure people, homes, and businesses are safe from flooding; (3) stormwater is managed as a resource to promote equity, sustainability, and resilience; (4) water quality is a point of pride; and (5) the SWD protects, restores, and enhances waterways for local communities and wildlife for future generations.

A number of additional funding measure considerations could be included in a potential funding measure including the following:

- Tax rate structure, which is the specific rate (e.g., cents per SF) that the tax could be levied.
- Exemptions to the special parcel tax that identifies ratepayers that may not receive a tax bill.
   Exemptions being considered include public parcels, ad valorem exempt parcels, and low-income senior property owners.
- Reductions or discounts for ratepayers that could reduce the tax bill and account for variability in the ratepayer base, affordability, or equity (e.g., low-income areas).
- Adjustments, incentives, credits, or rebates could be included for ratepayers who participate in
  eligible stormwater-related programs (e.g., stormwater best management practices, rain barrels,
  etc.).

<sup>7</sup> City of San Diego, Office of the City Attorney. 2021. *Legal Update to 2012 Memorandum of Law Titled "Proposition 218 Impacts to Storm Drain Fees".* 

<sup>8</sup> Impermeable area is characterized as any solid surface where water cannot penetrate, causing it to run off (e.g., roofs, driveways, sidewalks, walkways, etc.).

- Eligible and ineligible expenditures that could define what activities, programs, and project revenues from a funding measure can and cannot be spent on, respectively. Expenditures could also include administration and collection of the funding measure, debt financing, workforce job training, and educational and outreach efforts, among others.
- Debt and issuance of bonds using the special tax revenue stream through voter approval is necessary to issue debt (bonds, loans) payable from and secured by the revenues associated with the funding measure to fund the stormwater capital program and core services.
- Program governance (decision-making, oversight, and accountability) with elements like advisory and/or oversight committees, implementation plans, independent audits, annual budgets, and annual reporting.
- Appeals processes could be designed to allow for correction of errors in the administration or levy of the tax.

The SWD will also continue to monitor and track other rate increases, ballot measures, and initiatives that may impact the same ratepayer base from an affordability and equity standpoint (e.g., the upcoming PUD water and sewer rate increases).

### **Funding Mechanism Scenarios**

"Funding mechanism scenarios" refer to assessing different methods and considerations related to potential ratepayer impacts and revenue levels. At this time, the recommendation is to assess potential stormwater rates on an impermeable area basis, which uses a rate per square foot (SF) of impermeable area on a parcel or a subdivision of a parcel where there are stacked units (e.g., apartments and condominiums, Figure 15). Impermeable cover is the most common basis used for stormwater-related charges, with 87% of respondents of the 2021 Stormwater Utility Survey indicating that impermeable area is the basis for stormwater charges across the nation. It is often used because it charges ratepayers based on the relative contribution of stormwater runoff, or pollution carried by that runoff, generated from a parcel. Stakeholder feedback has indicated that a non-regressive and equitable approach be used, which is reflected in the recommendation to base rates on impermeable area and utilize exemptions and discounts for certain ratepayer classes.



Figure 15. Example of impermeable area on a parcel.

Table 1 presents the rate scenarios developed and tested in public opinion research surveys in March 2021 and August 2021. For these scenarios, ratepayer impacts and associated annual revenue were estimated for illustrative purposes, noting that new and more precise impermeable area data are currently being collected and analyzed (estimated to be available in Q3 FY2022).<sup>10</sup>

Impermeable Area Rates	Median Annual Single-Family	Median Monthly Single-	Estimated Annual
Tested in Surveys	Residential (SFR) Bill	Family Residential (SFR) Bill	Revenue Generated*
\$0.04 per SF	\$128.00	\$10.67	\$74 M
\$0.045 per SF	\$144.00	\$12.00	\$83 M
\$0.05 per SF	\$160.00	\$13.33	\$93 M

Table 1. Funding Mechanism Scenario Ranges for an Impermeable Area Special Parcel Tax

<sup>\*</sup> Estimated Revenue includes exemptions under consideration, including public parcels, ad valorem exempt parcels, and low-income senior property owners.

<sup>9</sup> Black & Veatch Management Consulting. 2021. 2021 Stormwater Utility Survey Report. https://www.bv.com/resources/2021-stormwater-survey-report.

<sup>10</sup> Data includes multi-spectral, 4-band near-infrared imagery and Light Detection and Ranging (LiDAR) remote sensing distance measurements that has been collected and is currently being processed and undergoing quality control.

### PUBLIC OPINION RESEARCH

The SWD is conducting additional public opinion research, thus far in FY2022 consisting of one survey conducted in August 2021, to build on the two surveys (December 2020 and March 2021) and focus groups (May 2021) conducted in FY2021. The August 2021 survey tested slightly revised sample ballot language for a potential stormwater funding measure and the importance of various stormwater-related priorities, including the capture of stormwater for local water supply, protection of water quality, preparation for future drought, maintenance of current infrastructure, and prevention of flooding, among others. Key findings from the public opinion research conducted to date include the following:

- Ongoing general education and community engagement for stormwater is essential.
   Stormwater issues and services are not well understood, but residents highly value the outcomes of SWD activities, especially clean water. Residents want additional information on the specific strategies and projects that could be funded and would contribute toward the proposed SWD funding program goals.
- There appears to be a strong sense of need for additional funding for stormwater, with high levels of importance placed on benefits provided.

Appendix E presents a more detailed summary of the public opinion research findings.

# ENGAGEMENT, OUTREACH AND EDUCATION

The SWD is committed to continuing and expanding education and outreach efforts about stormwater and the impactful and essential outcomes that a funded stormwater program can provide. Building upon the City's previous successes with the Think Blue brand that dates back 20 years, the SWD has renewed and refreshed the brand of **Think Blue San Diego:** *Clean Water*, *Clean Beaches* to modernize the aesthetic of the brand's image and its core brand attributes. This brand refresh has included a new logo, tagline, visual brand, updated website, and reengaging social media outlets that had fallen largely dormant.

The official Think Blue San Diego relaunch event was strategically planned and successfully held at four locations across San Diego for maximum reach and impact as part of California Coastal Cleanup Day on September 18, 2021, and generated significant media interest. California Coastal Cleanup Day provided an opportunity to bring the community together and raise awareness about the importance of protecting our beaches and watersheds from pollution and how Think Blue plays an important role in those efforts. These events also helped reinforce the refreshed branding of Think Blue San Diego: Clean Water, Clean Beaches (Figure 16).



Figure 16. Staff and volunteers at Smuggler's Gulch in the Tijuana River Valley worked hard to collect debris and trash in the area as part of California Coastal Cleanup Day.

Four local nonprofit organizations – I Love A Clean San Diego (ILACSD), San Diego River Park Foundation, Coastkeeper, and Wildcoast – partnered with the City at each of the locations to drive the highest awareness and engagement in different San Diego communities. Various communications tactics were used to ensure maximum participation and media exposure including paid media partnerships, earned media placements, social media postings, and owned-media content. The television, radio, print, and digital engagement efforts delivered 2.3 million impressions.

At each of the California Coastal Cleanup Day locations, City staff and local community group partners led clean-up activities and speaking programs while being surrounded by branded Think Blue creative collateral to further imprint the branding on participants. Creative collateral included items such as Think Blue signage with QR codes to drive attendees to the new Think Blue website and to sign up to stay informed about stormwater. The University Towne Center location had a six-mile bike ride touring five homes and highlighting watershed dynamics among other water topics. The main event in Ocean Beach was attended by more than 100 people inclusive of volunteers, staff, and elected officials, including Mayor Todd Gloria, District 2 City Council President Jen Campbell, District 7 Councilmember Raul Campillo, and Lifeguard Chief James Gartland, all of whom provided remarks to further solidify the relaunch of Think Blue and the importance of *Clean Water, Clean Beaches* (Figure 17).



Figure 17. ILACSD Executive Director, Len Hering, stood proudly with volunteers and staff during the Think Blue Relaunch and Coastal Cleanup Event in Ocean Beach.

Social media engagement reached a peak on event day through the Think Blue Instagram account. Participating non-governmental organizations (NGOs), volunteers, and elected officials posted their own organic content and tagged @ThinkBlueSD and #ThinkBlueSD in dozens of enthusiastic and informative postings about the event, the Think Blue relaunch, and the importance of stormwater and Think Blue to further advancing public awareness (Figure 18). As a result of these efforts over just a few weeks, the Think Blue Instagram account grew by more than 100 new followers and achieved more than 6% engagement within the platform (the goal for engagement on social media for public agencies is roughly 7%).

To continue momentum for the Think Blue relaunch efforts following California Coastal Cleanup Day, the SWD continued to post event successes on social media and shared event recaps through direct earned media outreach to local broadcast, digital, and print media outlets securing media features with CBS 8, NBC 7, and Times of San Diego.

Moving forward, the Think Blue initiative aims to continue building and expanding education and public awareness related to stormwater issues. There will be a three-pronged approach for public engagement and outreach efforts focused on paid media, earned media, and internal City communications – each with a different audience and different set of tailored messaging. These efforts include raising awareness of the Think Blue brand through messaging that educates the public about the importance of stormwater to San Diego's way of life; the nexus between clean stormwater, clean water, and clean beaches; and how residents and community partners can assist with the stormwater challenges facing the City.



Liked by thinkbluesd and 212 others

toddgloria Clean water, clean beaches! The #ToddSquad and I kicked off the weekend with @iloveacleansd for Costal Cleanup Day and relaunching the @thinkbluesd campaign. All of us have a responsibility to prevent stormwater pollution. When we take individual action, we can enjoy the benefits of clean water and clean beaches. #thinkbluesd #stormwater #coastalcleanupday

Figure 18. San Diego Mayor,
Todd Gloria shared a call-to-action
post on Instagram following
the Ocean Beach event.

## CONTINUED IMPLEMENTATION

The SWD is committed to addressing the mounting challenges facing the City that continue grow at an alarming pace, impacting local water quality and the safety of San Diego's infrastructure. The SWD will continue to assess opportunities to address the increasing funding gap for stormwater and further efforts central to funding measure development. Upcoming milestones include:

- Education, outreach, and stakeholder engagement—Ongoing
- Recommendation #6 response to Audit Committee—Q3 FY2022
- Newly collected impermeable cover data for Citywide use to be available  $-Q_3$  FY2022

# APPENDIX A THINK BLUE SAN DIEGO: CLEAN WATER, CLEAN BEACHES FACT SHEETS

CLEAN WATER.
CLEAN BEACHES.

THINK BLUE SAN DIEGO

While much of the City of San Diego's stormwater system is hidden underground, obscured from public view, this system is essential to our health, safety and quality of life. The stormwater system is a complex network of pipes, drains and other critical infrastructure that work together to help protect our environment and communities from pollution and flooding.

However, the system in place today is not able to meet critical needs of our city or our environment. Historical stormwater underfunding and drivers like climate change and urbanization are causing the demand on the system and funding challenges to escalate at a rapid pace.

Stormwater, which is not treated or cleaned of debris before it enters our waterways, flows from our homes and streets into the storm drain system, leading directly to our local bays and coastal waters. Deterioration of this essential system poses a threat to public health and safety. Many stormwater issues are currently addressed using a "band aid" approach with temporary fixes, creating more costly repairs down the road.

Without a dedicated funding source to address many pressing stormwater needs, San Diego's beaches will continue to be on the receiving end of toxins and trash, our local water quality will decline, and the safety of our basic infrastructure will continue to be compromised.



## Stormwater Department (SWD) Mission & Goals

The City of San Diego Stormwater Department is responsible for building, operating, and maintaining our city's vast and complex stormwater system.

### STORMWATER INFRASTRUCTURE FAILURES THREATEN PUBLIC SAFETY & IMPACT LIVABILITY

Failures of stormwater infrastructure are a great risk to our roads, homes and communities, also causing flooding, which threatens public safety and damage to property. The deterioration of our streets is partly a result of broken stormwater infrastructure including cracked and decaying gutters, as well as failing and broken water pipes that often leads to potholes, sinkholes and flooding in our communities.

Currently, there are three pump stations in Mission Beach at the end of their useful life, needing full repair and rehabilitation. The imminent failure of these pump stations would result in potentially 162 acres being underwater, impacting hundreds of homes and businesses and ultimately affecting thousands of people in San Diego.





## Major and Accelerating Consequences of Underfunding Stormwater Infrastructure Needs:

- 2,000+ known stormwater system failures
- 32 active emergencies, which are failures that pose an imminent risk to life and property (costing \$65M)
- Defunding of planned projects due to diversion of funds for emergencies
- Increased liability for City of San Diego, leading to fines, claims & litigation



Additional, long-term funding is necessary to address the massive backlog of failed infrastructure and prevent dangerous conditions like sinkholes and flooding.

THINKBLUE.ORG OCTOBER 2021

### POLLUTION & POOR WATER QUALITY ARE THREATENING OUR WAY OF LIFE

Unlike sewage, which is treated before disposal, stormwater flows directly into our coastal waters, untreated and unpurified. This stormwater is rife with trash and toxins, causing high bacterial levels, unsafe conditions for fishing, swimming and water recreation, risk of illness to beachgoers and harm to marine life. In addition, nearly all of the City's waterbodies are considered contaminated under the federal Clean Water Act.

#### **LOST WATER SUPPLIES**

Water is too precious to waste and in short supply. Stormwater can be used to enhance local supplies, especially critical in times of drought and in our fight against climate change.

Currently, San Diego loses the potential to capture more than 130 Billion gallons of water from stormwater each year.

### **Consequences of Crumbling Infrastructure on Water Quality**

- 586 beach advisories & 55 beach closures per year (on average)
- 101 additional impairments expected in San Diego waterbodies in 2022
- Ongoing potential waterborne illness for swimmers, surfers and beachgoers
- Increased harm to marine life from plastic and pollutants
- Reduced tourism & other economic consequences





### **Investing in Green Infrastructure**

Green Infrastructure includes structures and technologies designed to mimic nature and manage stormwater runoff. GI projects like this below are engineered to stop polluted stormwater from reaching our rivers, streams, bays, and coastal waters. Lack of proper stormwater management

causes water quality contamination, beach closures and is a public liability. However, currently, these critical projects are frequenty put on hold due to funding issues.



## UNDERFUNDING OF STORMWATER IMPACTS EVERYONE, EVERYWHERE IN SAN DIEGO.

The lack of investment in a stormwater system results in neighborhood flooding, beach closures, property damage, sinkholes, human sickness and harm to wildlife. Historic and ongoing underfunding for stormwater has halted the critical maintenance projects that keep our city safe and healthy. It has directly contributed to an increase in system failures, stormwater emergencies and halted progress on construction of proactive safety measures and clean water projects, such as installing Green Infrastructure (GI) to help with stormwater management and to prevent pollution to waterways.

Increasing funding and investing in stormwater will also provide many community benefits including clean, green streets; flood management; walking and bike paths; green spaces; and stream and wetland restoration. Stormwater investments also benefit underserved communities that often have unmet infrastructure needs (e.g., restoring a stream in an area where there isn't existing open space provides recreational access and green space).

### ADDRESSING THE FUNDING GAP

A dedicated funding source is imperative to address these issues. The City is evaluating the viability of a stormwater-related ballot measure or similar dedicated stormwater funding mechanism.

The SWD is committed to addressing the mounting challenges facing our city, including imminent and anticipated system failures. Though these issues are growing at an alarming pace, the City works hard every day to protect our environment, but it is increasingly difficult without adequate funding. A dedicating funding source would enhance overall safety and quality of life for all San Diegans.

Over the next 20 years, \$6.7 Billion in investments are needed to make our stormwater system safe, reliable and in compliance with regulations.

## With adequate funding, the SWD would be able to:

- Proactively replace failing infrastructure before risks to life and property occur
- Invest in clean water and GI
- Capture water for enhancing local supplies
- Increase community education and engagement
- Complete restoration efforts







# APPENDIX B ENVIRONMENTAL WATER QUALITY AND COMMUNITY FLOOD ASSESSMENT FACT SHEETS

## CLEAN WATER, CLEAN BEACHES



### **ISSUES OF CONCERN:**

STORMWATER FLOWS UNTREATED INTO OUR LOCAL BAYS & COASTAL WATERS

### STORMWATER PICKS UP POLLUTANTS FROM URBAN AREAS



As rainfall falls in developed areas, impermeable areas such as roofs, paved spaces, and roadways increase runoff and contribute urban pollutants (e.g. trash, dirt, and toxics like metals and pesticides) to storm flows.



## **IMPROVING WATER QUALITY:** GREEN INFRASTRUCTURE CAN TREAT STORMWATER FLOWS TO SUPPORT

Rainwater

Harvesting

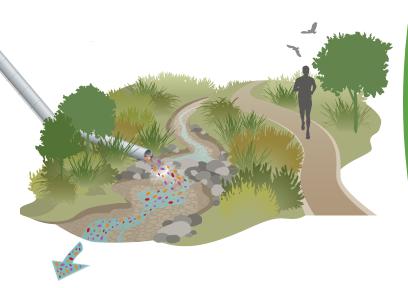


Bioretention **Treatment** 

### POLLUTANTS REACH OUR WATERWAYS AND BEACHES



Stormwater pollutants are carried untreated into San Diego's interconnected network of creeks, channels, and rivers. Eventually, these flows enter local bays, lagoons and coastal ocean waters.



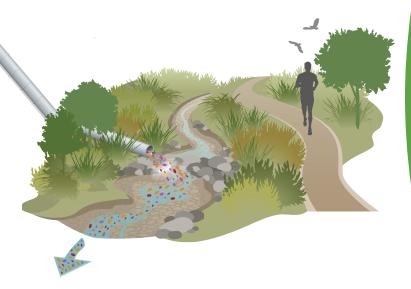
## THINK BLUE **SAN DIEGO** thinkblue.org

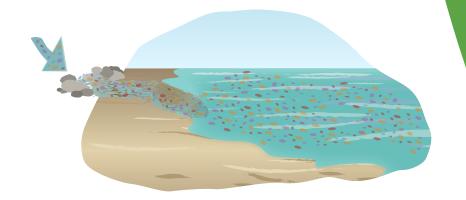
Clean Water

### POLLUTED WATERS THREATEN WILDLIFE AND IMPACT OUR SAFE USE OF BEACHES AND WATERWAYS



Polluted waters affect public health and safety, threaten wildlife and at times render our beaches unusable. This impacts our quality of life, economy and exposes the City to significant fines and/or lawsuits.





## **ENVIRONMENTAL WATER QUALITY STATUS**





### **WATER QUALITY IN WATERWAYS** IS FALLING SHORT OF STANDARDS

San Diego's diverse neighborhoods, local wildlife and habitats, and worldclass recreation areas all rely on safe, clean water. The City owns and operates a storm drain system subject to federal, state and local water quality protection regulatory requirements. Numerous watershed- and waterbodyspecific requirements have strict pending and future pollutant control limits that present significant logistical and financial challenges to the City.



### **WATER QUALITY PROGRESS & CHALLENGES**

The City conducts a multi-faceted urban runoff program to efficiently and cost-effectively implement water quality improvement activities. The program includes Think Blue education and outreach activities; cleanups; inspection and enforcement; and planning and implementation of best management practices (BMPs) designed to reduce pollutant sources and treat urban runoff.

The City performs street sweeping, catch basin cleaning, storm drain maintenance, and monitoring to assess progress and improve programs.

Even with these programs, the City needs to do more to meet water quality requirements. Inadequate funding has limited program implementation and effectiveness. This ongoing pollution challenge impacts San Diego's economic vitality and quality of life.

outreach events. with 3,177 volunteers, removing 71,610 pounds of trash and debris

Over pipe cleaned, removing 1,309 tons of trash and debris

Over miles swept, removing 712,808 cubic

San Dieguito River Watershed Los Penasquitos Watershed **D** CD6 San Diego River CD7 Watershed Mission Bay Watershed CD9 CD3 San Diego Bay

beach closures & 586 beach advisories per year on average

of the City drains to an impaired waterbody

new impairments expected in San Diego waters by 2022

### **LEGEND**

1.5 3 Miles 

Impermeable Area **Permeable Area** 

**Watershed Boundary** 

**Impaired Waterbodies** 

Impaired waters based on proposed 2022 303(d) list

#### **BENEFICIAL USES IMPAIRED**

**Water Supply** 



**Water Recreation** 



**Aquatic Habitat** 



Watershed

**Shellfish Harvesting** 



Rare, Threatened, or **Endangered Species** 



Tijuana River

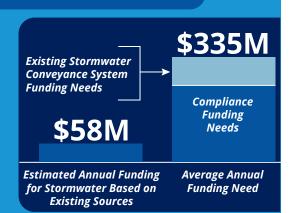
**Preservation of Biological Habitats of Special Significance** 





### **MOUNTING CHALLENGES**

Inadequate and deferred funding for water quality improvements inreases the City's risk of costly penalties. Estimated annual stormwater regulation compliance costs are nearly \$246 million for the next 20 years. Additional costs are associated with habitat and species impacts, tourist revenue losses, and depressed climate resiliency. Water quality challenges adversely affect San Diego's unique environment, health and welfare of residents and visitors, and expose the City to costly third-party litigation.









#### **WATERWAYS**

Council District 1 encompasses northern coastal City communities and spans portions of the San Dieguito, Los Peñasquitos, and Mission Bay watersheds. Numerous tributaries within these systems flow to iconic San Diego waterways including the San Dieguito River and Lagoon, Los Peñasquitos Creek and Lagoon, Rose Creek, and the Pacific Ocean.



#### **ISSUES OF CONCERN**

Water quality monitoring and area assessments are used to identify waterway-specific highest priority water quality conditions. The highest priority conditions in each watershed address regulatory requirements, drive selected management strategies to improve the quality of discharges from the City's storm drain system, and help protect, preserve, enhance, and restore our waterways (Water Quality Improvement Plans [WQIPs] in the San Diego Region, https://projectcleanwater.org/watersheds/).

#### **Highest Priority Water Quality Conditions**

San Dieguito Bacteria, nutrients Watershed Bacteria, freshwater discharges Los Peñasquitos during dry weather, sediment Watershed transport from upstream sources Mission Bay Bacteria, sediment Watershed



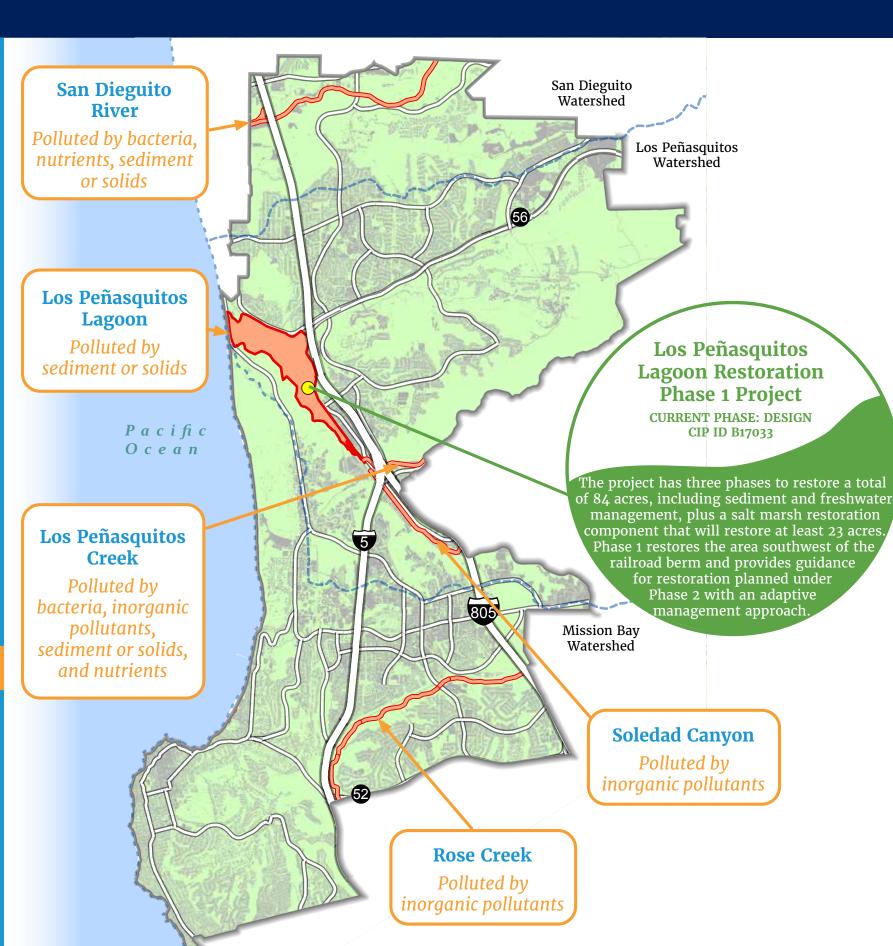
**Pollutant Types** Causing Impairments





#### **IMPROVING WATER QUALITY**

The Stormwater Department works to safeguard these waters and protect water quality by conducting education and outreach, implementing best management practices (BMPs) to prevent and control sources of pollution, and manage new and existing development. Green Infrastructure (GI), structural treatment controls and stream/habitat/lagoon restoration are also used to treat pollutants and improve water quality conditions in Council District 1.



29,799 acres (100%) of Council District 1 drains to an impaired waterbody

#### BENEFICIAL USES IMPAIRED



**Water Supply** 



**Water Recreation** 



**Aquatic Habitat** 



**Shellfish Harvesting** 

#### **LEGEND**





Impermeable Area **Permeable Area** 



**Watershed Boundary** 



**Impaired Waterbodies** 







#### **WATERWAYS**

Council District 2 encompasses the southern coastal communities within the City and includes many iconic waterways like the San Diego Bay, San Diego River, Mission Bay, and the Pacific Ocean. Council District 2 includes portions of three watersheds: Mission Bay Watershed, San Diego River Watershed, and San Diego Bay Watershed, all discharging to the Pacific Ocean.



#### **ISSUES OF CONCERN**

Water quality monitoring and area assessments are used to identify waterway-specific highest priority water quality conditions. The highest priority conditions in each watershed address regulatory requirements, drive selected management strategies to improve the quality of discharges from the City's storm drain system, and help protect, preserve, enhance, and restore our waterways (Water Quality Improvement Plans [WQIPs] in the San Diego Region, https://projectcleanwater.org/watersheds/).

#### **Highest Priority Water Quality Conditions**

San Diego River Watershed	Bacteria
San Diego Bay Watershed	Bacteria, dissolved copper, lead, zinc
Mission Bay Watershed	Bacteria, sediment



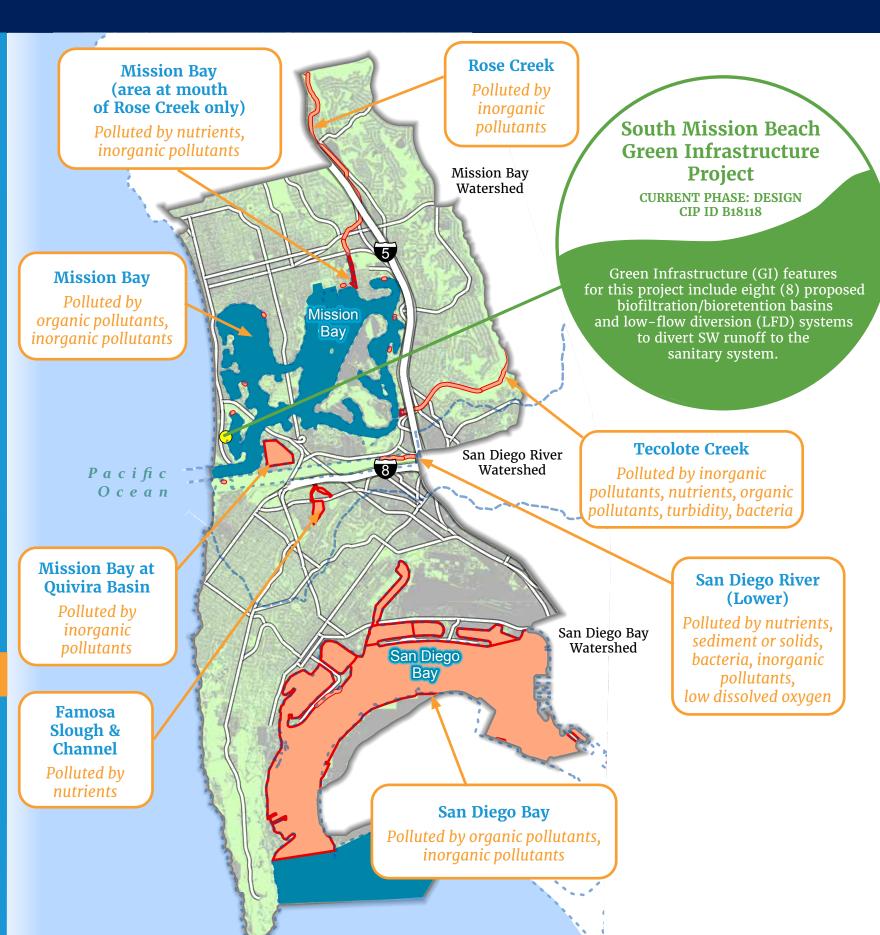
Pollutant Types
Causing Impairments





#### **IMPROVING WATER QUALITY**

The Stormwater Department works to safeguard these waters and protect water quality in San Diego by engaging in activities like stormwater best management practice (BMP) development and enforcement, public education, and water quality monitoring. Low Impact Development, Green Infrastructure, and stream restoration sites help address the priority water quality conditions in Council District 2.



24,522 acres (100%) of Council District 2

drains to an impaired waterbody

#### **BENEFICIAL USES IMPAIRED**



**Water Supply** 



**Water Recreation** 



**Aquatic Habitat** 



**Shellfish Harvesting** 

#### **LEGEND**



0 0.5 1 Mile



Impermeable Area
Permeable Area



**Watershed Boundary** 









#### **WATERWAYS**

Council District 3 encompasses some of the more urban neighborhoods within the City and runs along many iconic waterways like the San Diego Bay and the Pacific Ocean. Council District 3 includes portions of two watersheds: San Diego River Watershed and San Diego Bay Watershed, both discharging to the Pacific Ocean



#### **ISSUES OF CONCERN**

Water quality monitoring and area assessments are used to identify waterway-specific highest priority water quality conditions. The highest priority conditions in each watershed address regulatory requirements, drive selected management strategies to improve the quality of discharges from the City's storm drain system, and help protect, preserve, enhance, and restore our waterways (Water Quality Improvement Plans [WQIPs] in the San Diego Region, https://projectcleanwater.org/watersheds/).

#### **Highest Priority Water Quality Conditions**

San Diego River Watershed	Bacteria
San Diego Bay	Bacteria, dissolved copper,
Watershed	lead, zinc

Pollutant Types
Causing Impairments

2 Impaired Waterbodies



#### **IMPROVING WATER QUALITY**

The Stormwater Department works to safeguard these waters and protect water quality in San Diego by engaging in activities like stormwater best management practice (BMP) development and enforcement, public education, and water quality monitoring. Low Impact Development, Green Infrastructure, and stream restoration sites help address the priority water quality conditions in Council District 3.



9,559 acres
(100%) of Council District 3
drains to an impaired waterbody

#### **BENEFICIAL USES IMPAIRED**



**Water Recreation** 



**Aquatic Habitat** 



**Shellfish Harvesting** 

**LEGEND** 

0.5

Impermeable Area

Permeable Area



Watershed Boundary









#### **WATERWAYS**

Council District 4 encompasses some of the more urban neighborhoods within the City and contains portions of Chollas Creek. Council District 4 is part of the San Diego Bay Watershed, ultimately discharging to San Diego Bay and the Pacific Ocean.



#### **ISSUES OF CONCERN**

Water quality monitoring and area assessments are used to identify waterway–specific highest priority water quality conditions. The highest priority conditions in each watershed address regulatory requirements, drive selected management strategies to improve the quality of discharges from the City's storm drain system, and help protect, preserve, enhance, and restore our waterways (Water Quality Improvement Plans [WQIPs] in the San Diego Region, https://projectcleanwater.org/watersheds/).

#### **Highest Priority Water Quality Conditions**

San Diego Bay Watershed Bacteria, dissolved copper,

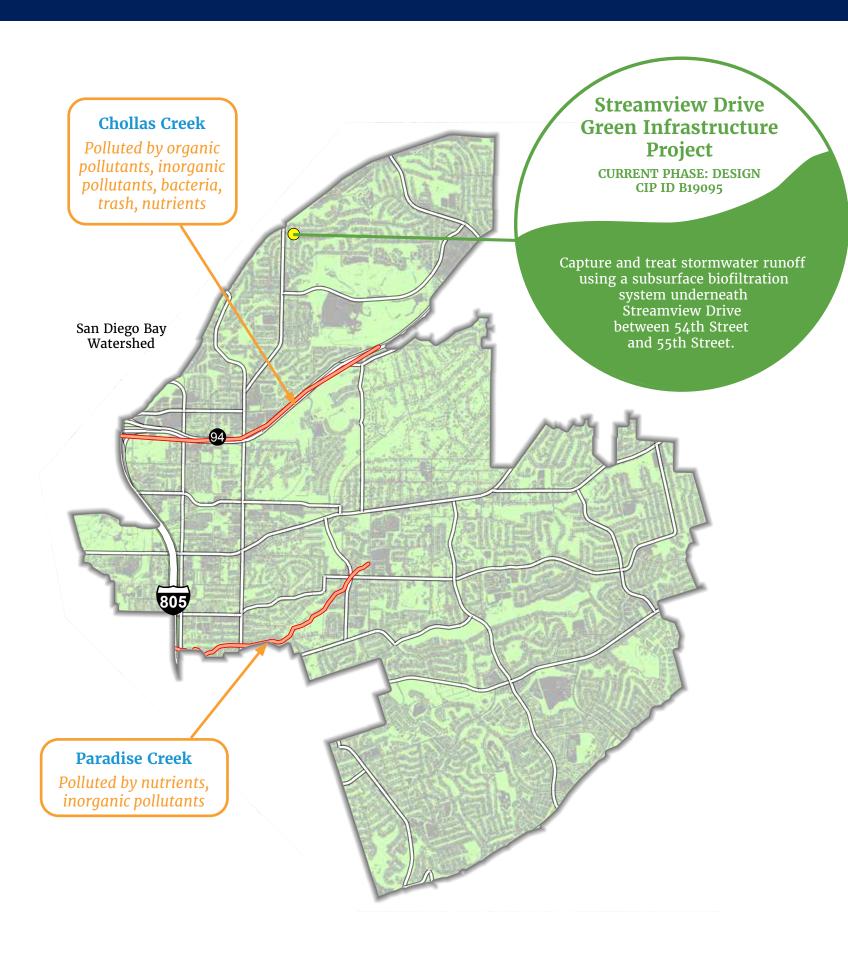
ed lead, zinc

Pollutant Types
Causing Impairments



#### **IMPROVING WATER QUALITY**

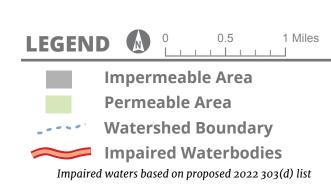
The Stormwater Department works to safeguard these waters and protect water quality in San Diego by engaging in activities like stormwater best management practice (BMP) development and enforcement, public education, and water quality monitoring. Low Impact Development, Green Infrastructure, and stream restoration sites help address the priority water quality conditions in Council District 4.



11,131 acres
(100%) of Council District 4
drains to an impaired waterbody

#### BENEFICIAL USES IMPAIRED











#### **WATERWAYS**

Council District 5 includes the communities in the northeast portion of the City and includes local waterbodies like Lake Hodges, Los Peñasquitos Creek, and Santa Ysabel Creek that ultimately drain to Los Peñasquitos Lagoon, Mission Bay, the San Diego River, and the Pacific Ocean.



#### **ISSUES OF CONCERN**

Water quality monitoring and area assessments are used to identify waterway-specific highest priority water quality conditions. The highest priority conditions in each watershed address regulatory requirements, drive selected management strategies to improve the quality of discharges from the City's storm drain system, and help protect, preserve, enhance, and restore our waterways (Water Quality Improvement Plans [WQIPs] in the San Diego Region, https://projectcleanwater.org/watersheds/).

#### **Highest Priority Water Quality Conditions**

San Dieguito Watershed Bacteria, nutrients

San Diego River Watershed Bacteria

Los Peñasquitos Watershed Bacteria, freshwater discharges during dry weather, sediment transport from upstream sources

Mission Bay Watershed

Bacteria, sediment

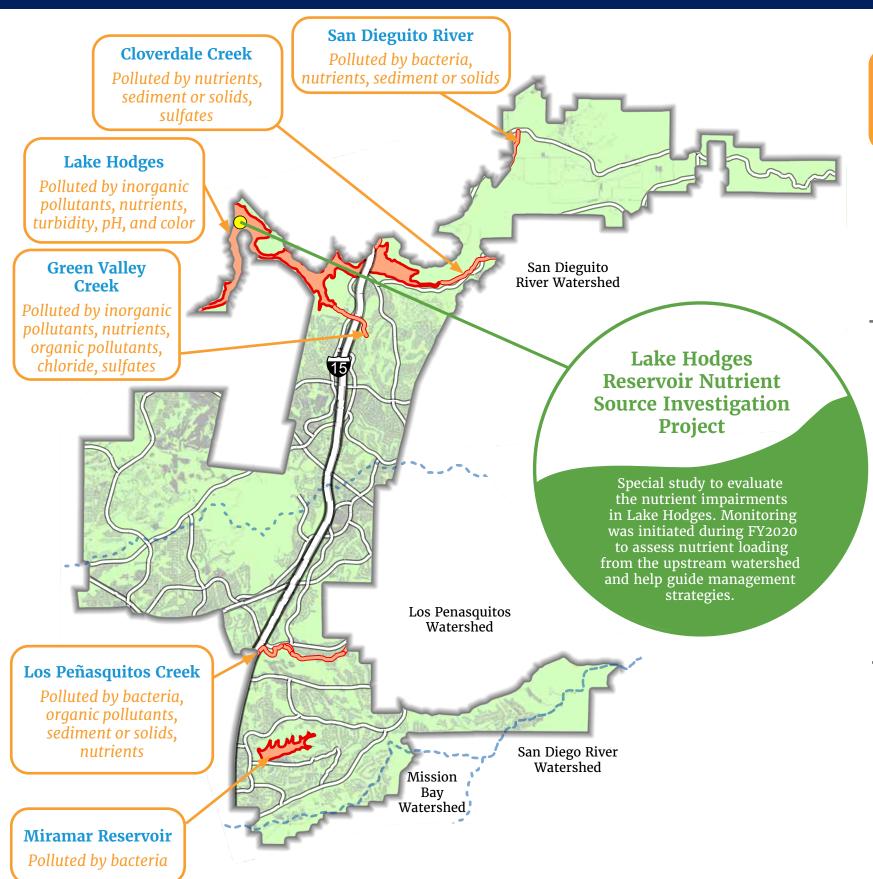
Pollutant Types
Causing Impairments





#### **IMPROVING WATER QUALITY**

The Stormwater Department works to safeguard these waters and protect water quality in San Diego by engaging in activities like stormwater best management practice (BMP) development and enforcement, public education, and water quality monitoring. Low Impact Development, Green Infrastructure, and stream restoration sites help address the priority water quality conditions in Council District 5.



40,190 acres
(99%) of Council District 5
drains to an impaired waterbody

#### BENEFICIAL USES IMPAIRED



**Water Supply** 



Water Recreation



**Aquatic Habitat** 

**LEGEND** 

M

0 0.5 1 Miles

Impermeable Area





**Impaired Waterbodies** 

Impaired water based on proposed acces acced by







#### **WATERWAYS**

Council District 6 encompasses the Mira Mesa, Miramar, and Clairemont Mesa neighborhoods within the City and ultimately drains to three different downstream waterbodies: Los Peñasquitos Lagoon, San Diego Bay, and the San Diego River.



#### **ISSUES OF CONCERN**

Water quality monitoring and area assessments are used to identify waterway-specific highest priority water quality conditions. The highest priority conditions in each watershed address regulatory requirements, drive selected management strategies to improve the quality of discharges from the City's storm drain system, and help protect, preserve, enhance, and restore our waterways (Water Quality Improvement Plans [WQIPs] in the San Diego Region, https://projectcleanwater.org/watersheds/).

#### **Highest Priority Water Quality Conditions**

San Diego River Watershed	Bacteria
Los Peñasquitos Watershed	Bacteria, freshwater discharges during dry weather, sediment transport from upstream sources
Mission Bay Watershed	Bacteria, sediment



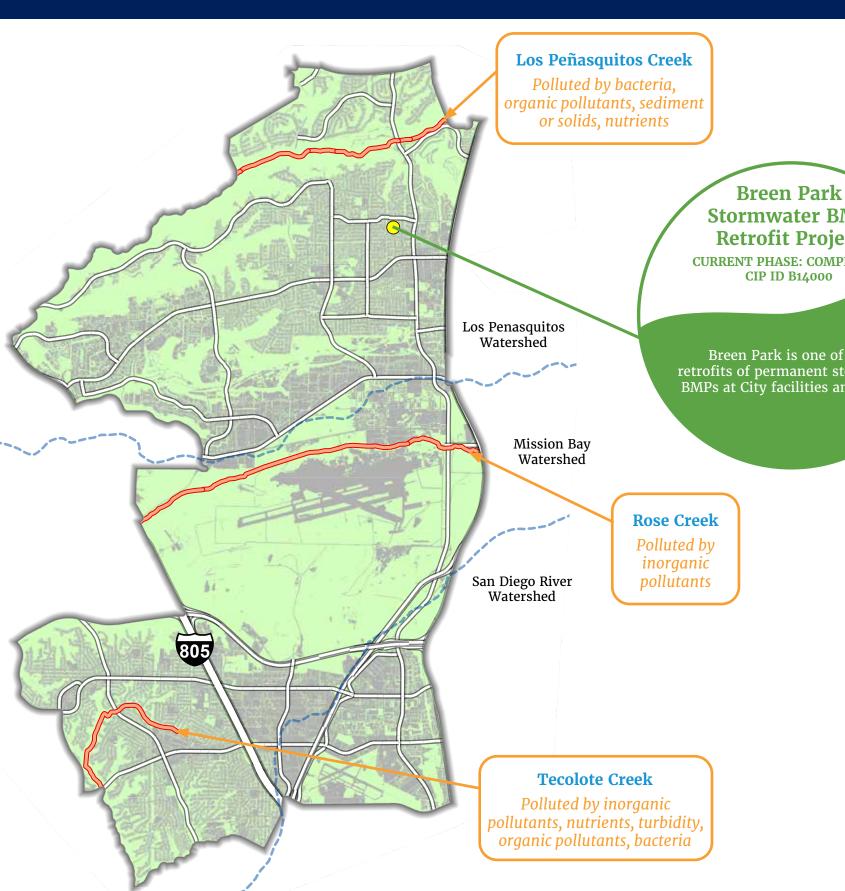
**Pollutant Types Causing Impairments** 





#### **IMPROVING WATER QUALITY**

The Stormwater Department works to safeguard these waters and protect water quality in San Diego by engaging in activities like stormwater best management practice (BMP) development and enforcement, public education, and water quality monitoring. Low Impact Development, Green Infrastructure, and stream restoration sites help address the priority water quality conditions in Council District 6.



drains to an impaired waterbody

#### **Stormwater BMP Retrofit Project CURRENT PHASE: COMPLETED**

CIP ID B14000

Breen Park is one of nine retrofits of permanent stormwater BMPs at City facilities and parks.

#### **BENEFICIAL USES IMPAIRED**



**Water Supply** 



**Water Recreation** 

#### **LEGEND**



0 0.5 1 Miles



Impermeable Area **Permeable Area** 



**Watershed Boundary** 









#### **WATERWAYS**

Council District 7 is located central to the City's boundaries to the west where many of the neighborhoods are directly along the San Diego River. Council District 1 includes portions of three watersheds: Los Peñasquitos Watershed, Mission Bay Watershed, and San Diego River Watershed.



#### **ISSUES OF CONCERN**

Water quality monitoring and area assessments are used to identify waterway–specific highest priority water quality conditions. The highest priority conditions in each watershed address regulatory requirements, drive selected management strategies to improve the quality of discharges from the City's storm drain system, and help protect, preserve, enhance, and restore our waterways (Water Quality Improvement Plans [WQIPs] in the San Diego Region, https://projectcleanwater.org/watersheds/).

#### **Highest Priority Water Quality Conditions**

San Diego River Watershed	Bacteria
Los Peñasquitos Watershed	Bacteria, freshwater discharges during dry weather, sediment transport from upstream sources
Mission Bay Watershed	Bacteria, sediment



Pollutant Types
Causing Impairments



Impaired Waterbodies



#### **IMPROVING WATER QUALITY**

The Stormwater Department works to safeguard these waters and protect water quality in San Diego by engaging in activities like stormwater best management practice (BMP) development and enforcement, public education, and water quality monitoring. Low Impact Development, Green Infrastructure, and stream restoration sites help address the priority water quality conditions in Council District 7.



inorganic pollutants, low dissolved oxygen

41,614 acres
(100%) of Council District 7
drains to an impaired waterbody

#### **BENEFICIAL USES IMPAIRED**



**Water Supply** 



**Water Recreation** 



**Aquatic Habitat** 

#### **LEGEND**



0 0.5 1 Miles



Impermeable Area
Permeable Area



Watershed Boundary

Impaired Waterbodies



### **ENVIRONMENTAL WATER QUALITY STATUS**

**COUNCIL DISTRICT 8** 





#### **WATERWAYS**

Council District 8 includes two geographically separate parts of the City that (1) run along San Diego Bay or (2) are along the United States and Mexico Border and ultimately drain to Tijuana River. Council District 8 has parts in the San Diego Bay Watershed and the Tijuana River Watershed.



#### **ISSUES OF CONCERN**

Water quality monitoring and area assessments are used to identify waterway-specific highest priority water quality conditions. The highest priority conditions in each watershed address regulatory requirements, drive selected management strategies to improve the quality of discharges from the City's storm drain system, and help protect, preserve, enhance, and restore our waterways (Water Quality Improvement Plans [WQIPs] in the San Diego Region, https://projectcleanwater.org/watersheds/).

#### **Highest Priority Water Quality Conditions**

Bacteria, dissolved copper, San Diego Bay Watershed lead, zinc

Tijuana River Watershed

Sedimentation/siltation, and turbidity



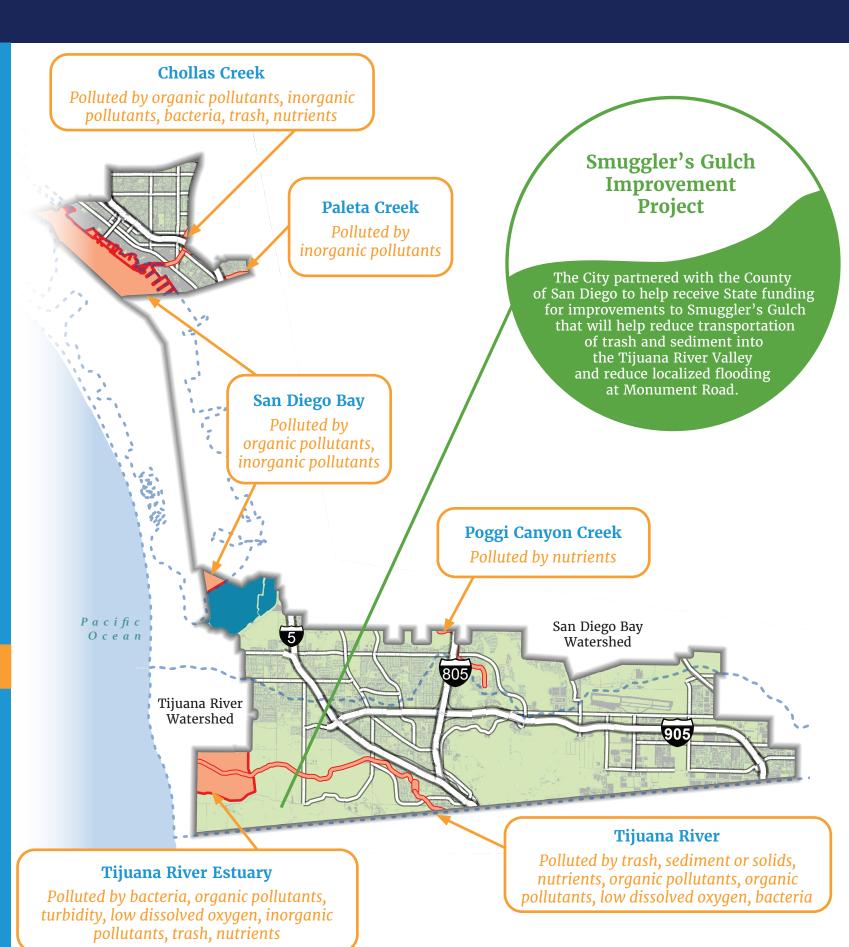
**Pollutant Types** Causing Impairments



**Impaired Waterbodies** 

#### **IMPROVING WATER QUALITY**

The Stormwater Department works to safeguard these waters and protect water quality in San Diego by engaging in activities like stormwater best management practice (BMP) development and enforcement, public education, and water quality monitoring. Low Impact Development, Green Infrastructure, and stream restoration sites help address the priority water quality conditions in Council District 8.



(99%) of Council District 8 drains to an impaired waterbody

#### **BENEFICIAL USES IMPAIRED**



**Water Supply** 



**Water Recreation** 



**Aquatic Habitat** 



**Shellfish Harvesting** 



Rare, Threatened, or **Endangered Species** 



**Preservation of Biological Habitats of Special Significance** 

#### **LEGEND**



0 0.5 1 Miles 



Impermeable Area **Permeable Area** 



**Watershed Boundary** 



**Impaired Waterbodies** Impaired waters based on proposed 2022 303(d) list







#### **WATERWAYS**

Council District 9 encompasses some of the more urban neighborhoods within the City and contains an extensive, largely underground stormwater system that drains to the San Diego River and San Diego Bay.



#### **ISSUES OF CONCERN**

Water quality monitoring and area assessments are used to identify waterway-specific highest priority water quality conditions. The highest priority conditions in each watershed address regulatory requirements, drive selected management strategies to improve the quality of discharges from the City's storm drain system, and help protect, preserve, enhance, and restore our waterways (Water Quality Improvement Plans [WQIPs] in the San Diego Region, https://projectcleanwater.org/ watersheds/).

#### **Highest Priority Water Quality Conditions**

San Diego River Watershed	Bacteria
San Diego Bay	Bacteria, dissolved copper,
Watershed	lead, zinc

**Pollutant Types** Causing Impairments

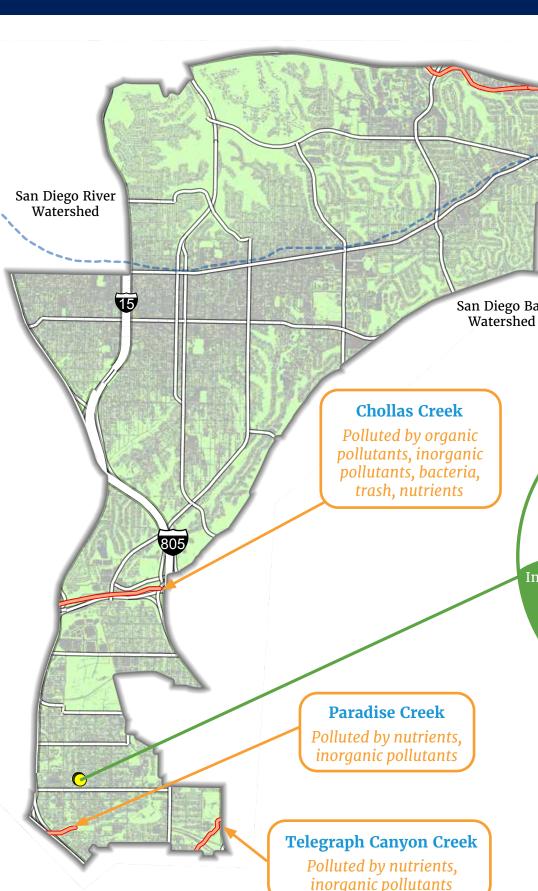


Waterbodies



#### **IMPROVING WATER QUALITY**

The Stormwater Department works to safeguard these waters and protect water quality in San Diego by engaging in activities like stormwater best management practice (BMP) development and enforcement, public education, and water quality monitoring. Low Impact Development, Green Infrastructure, and stream restoration sites help address the priority water quality conditions in Council District 9.



**Alvarado Creek** 

Polluted by nutrients, inorganic pollutants

San Diego Bay

**Project CURRENT PHASE: DESIGN CIP ID B15214** 

**Cherokee Point** 

**Green Infrastructure** 

Install GI measures to treat the 0.5-inch storm event within the ~478,000 SF drainage area bound by 35th Street to the west, Cherokee Avenue to the east, Wightmant Street to the north, and a vegetated ravine (located between Landis and Dwight Streets) to the south. The project will also install three new headwalls.

drains to an impaired waterbody

#### **BENEFICIAL USES IMPAIRED**



**Water Supply** 



**Water Recreation** 



**Aguatic Habitat** 

Impermeable Area **Permeable Area** 

**Watershed Boundary** 



**Impaired Waterbodies** 



## COMMUNITY FLOOD ASSESSMENT WHAT IS AT RISK IN FISCAL YEAR 2021?







#### **STORMWATER INFRASTRUCTURE**

The Stormwater Division works year-round to safeguard San Diego's waters and protect San Diego from flooding by managing a vast, largely hidden stormwater infrastructure system. The infrastructure is interconnected and must be managed with a watershed-wide approach; the degradation or failure of one component can impact the entire stormwater system. Across the City, the Stormwater

Division operates and maintains over 1,100 miles of storm drain pipe, 70 miles of channels, 80 miles of drainage ditches, 2,700 miles of streets swept, 46,000 stormwater structures like inlets and outfalls, 7 miles of levees, and 15 pump stations.

Total value of the existing stormwater system quantified = \$5.8B as replacement cost



#### PRE-STORM COMMUNITY FLOOD ASSESSMENT

Each year the Stormwater Division performs a comprehensive infrastructure flood assessment prior to the rainy season to identify and evaluate locations of concern for failure or flooding so that an appropriate response strategy can be developed. These vulnerabilities are due to a number of causes, including a growing customer base, aging infrastructure, changing climate patterns that increase stress on the system, and long-standing, consistent underfunding for proactive maintenance and repairs.

A Citywide summary of the fiscal year (FY) 2021 pre-storm flood assessment is presented to the right, of which

will be addressed in FY2021 due to current

Detail on the types of stormwater system vulnerabilities is presented on the back of this sheet and locations within each Council District are presented on specific Council District Community Flood Assessment fact sheets.



#### STORMWATER DIVISION FUNDING GAP

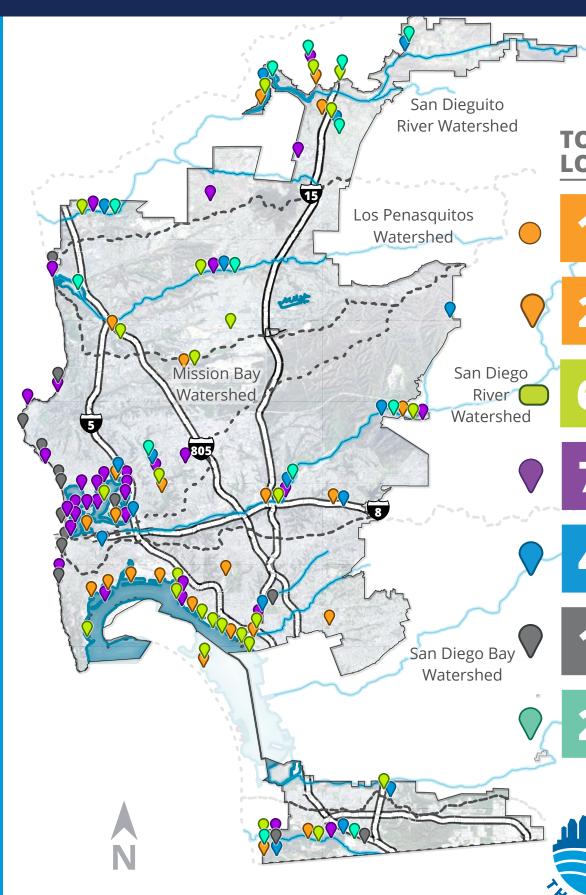
Due to insufficient funding to address vulnerabilities, the Stormwater Division often has to resort to temporary mitigation measures like operating bypass pumps during rainstorms to minimize the impacts of pipe failures. If failures pose a significant public health, safety, or environmental concern, emergency funding will have to be reallocated from other City efforts at City Council discretion. In FY2021, it is anticipated that \$26 million will need to be reallocated from other Departments to address known failures and upcoming stormwater emergencies. The Stormwater

Division is developing a long-term strategy to secure additional funding and address the growing number of vulnerable locations.

\$274M

\$48.5M

**STORMWATER DIVISION FY2021 BUDGET**  **AVERAGE ANNUAL FUNDING NEEDED** 



#### **TOTAL KNOWN LOCATIONS CITYWIDE**

**Pipe Failure** Locations

**Pipe Failure Bypass** Locations

**Channel Degradation** Locations

**Structure Degradation** Locations

**Flooding Locations -Surface Drainage** 

**Levee Degradation** Locations

**Drainage Ditch Degradation Locations** 



### **COMMUNITY FLOOD ASSESSMENT TYPES**





#### 1832 Pipe Failures Locations

These locations represent stormdrain pipes that have been damaged or have degraded to a condition that requires replacement. Pipe failures can lead to community safety risks like flooding, sinkholes and slope failures.



#### **24 Pipe Failure Bypass Locations**

During rain events, Stormwater Division staff operate mobile bypass pumps at certain pipe failure locations as a temporary mitigation measure due to funding being unavailable to permanently repair or upgrade the pipe. These bypasses are necessary to decrease flooding impacts and reduce chance for larger scale failures in the surrounding infrastructure and community. Over the long term, operating these "band aid" solutions both diverts resources from other priorities and is more expensive than fixing the failure in the first place.



### 49 Flooding Locations - Surface Drainage

These locations experience flooding due to surface drainage issues – some causes include current infrastructure that is undersized, the need for new infrastructure, or roads that have been paved over and do not have sufficient capacity in the curb and gutter system to minimize flood risk.



#### 68 Channel Degradation Locations

These locations represent the priority channels identified over the past three years (FY2018-FY2020) as needing maintenance or repair to reduce the risk of failure and impacts to the surrounding community. The Stormwater Division may need to remove invasive or overgrown vegetation, clear accumulated sediment and trash, repair holes or failures in the channels, or address erosion.



### **7 Stormwater Structure Degradation Locations**

These locations include stormwater structures like outfalls, and debris or detention basins that are designed to reduce the chance for flooding and the transport of trash, debris and pollution through the stormwater system. Over time these locations experience degradation and may become clogged with sediment and overgrown vegetation that needs to be maintained.



### 13 Levee Degradation Locations

Levees are embankments that protect large waterways from flooding nearby communities. To reduce the chance of unwanted overtopping of levees and flooding, maintenance and repairs are needed including removal of vegetation and trees and restoration of slopes and banks.



### **2 Drainage Ditch Degradation Locations**

Drainage ditches are above ground depressions that carry stormwater. These ditches require that the Stormwater Division keep them clear of vegetation, trash and debris and make sure they don't become damaged over time. These locations have been identified as needing maintenance and repair to protect from flooding.



Visit the Think Blue San Diego website to learn more: www.thinkblue.org

## COUNCIL DISTRICT 1: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT





#### **STORMWATER INFRASTRUCTURE IN COUNCIL DISTRICT 1**

Council District 1 encompasses the northern coastal communities within the City and includes many of the City's iconic waterways like the Los Peñasquitos Lagoon, San Dieguito Lagoon and the Pacific Ocean. The Stormwater Division works to safeguard these waters and protect San Diego from flooding by managing a vast, largely hidden stormwater infrastructure system. In Council District 1 alone, the Stormwater Division operates and maintains more than:

156	Miles of Storm Drain Pipe
12	Miles of Channels
3,200	Storm Drain Inlets
3,722	Other Stormwater Structures (e.g., culverts, outfalls, basins, etc.)

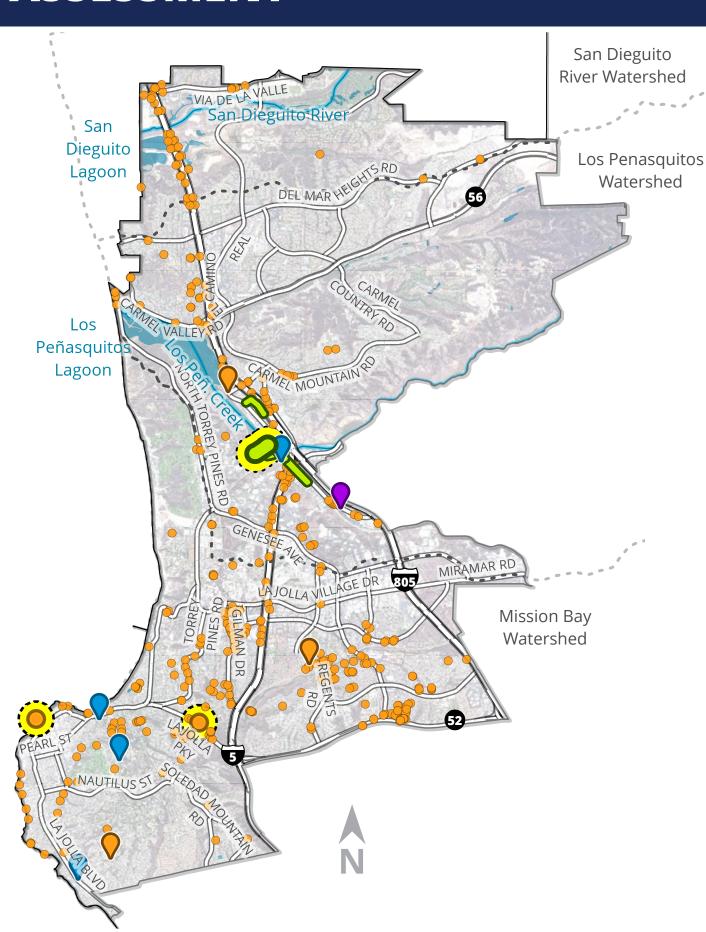


#### **PRE-STORM COMMUNITY FLOOD ASSESSMENT**

Each year the Stormwater Division performs a comprehensive infrastructure flood assessment prior to the rainy season to identify and evaluate locations of concern for failure or flooding so that an appropriate response strategy can be developed. These vulnerabilities are due to a number of causes, including a growing customer base, aging infrastructure, changing climate patterns that increase stress on the system, and long-standing, consistent underfunding.

A map presenting the locations and counts of vulnerabilities in Council District 1 to the right. To learn more about different types of stormwater system vulnerabilities, turn to Page 2.

known vulnerable locations will be funded in FY2021.



#### **KNOWN LOCATIONS**

**Pipe Failure** Locations

**Pipe Failure Bypass** Locations

**Channel Degradation** Locations

**Structure Degradation** Location

**Flooding Locations -Surface Drainage** 

**Highlighted locations are** presented in additional detail on Page 2 of this fact sheet.



Visit the Think Blue San Diego website to learn more: www.thinkblue.org

## COUNCIL DISTRICT 1: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT SNAPSHOT

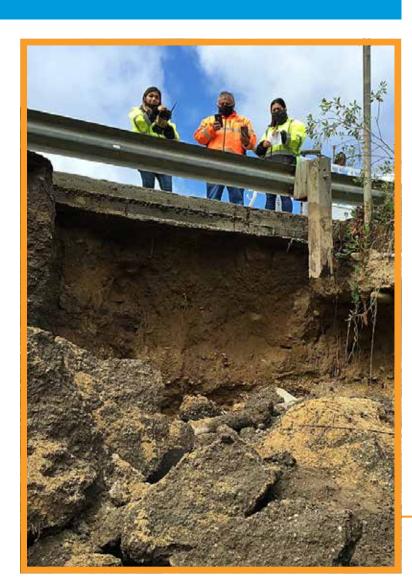


The broken pipe near the Children's Pool Lifeguard station causes

The FY2021 community flood assessment identified 426 vulnerable locations within Council District 1, including 5 channel degradation locations, 416 pipe failure locations, 4 known flooding locations attributed to surface drainage issues, and 1 degraded stormwater structure.

### None of these 426 vulnerable locations are currently funded for FY2021.

The locations presented on this page demonstrate the range and types of vulnerabilities in Council District 1, and are a snapshot in time for FY2021 (a full summary is presented on Page 1).



Pipe failures and achannel degradation location have caused flooding and slope failures along La Jolla Scenic Drive.



#### Example Pipe Failure and Channel Degradation Location

The stormwater system near La Jolla Scenic Drive has three pipe failures and a channel degradation location that has caused flooding, erosion, and slope failures along the roadway and offramp that pose a public safety risk.

#### Example Pipe Failure Location

There is a failed pipe with a missing bottom near the Children's Pool Lifeguard Station. The broken pipe continues to cause erosion to the coastal bluffs and beaches below. It is also unsafe for people to walk or stop near the broken pipe due to the potential for further failures or disintegrating pipe falling.



## Example Channel Degradation Location

The concrete channel near Flinkote
Avenue needs to be maintained and
to remove vegetation that is clogging
the channel and causing undesirable
standing water even during dry weather
(as shown). During rainfall, the channel
often floods into the adjacent properties.
The clearing of this channel is anticipated
to be conducted in FY2022 if funded
during the annual budget process.



Vegetation at the end of the channel has caused standing water and flooding near Flinkote Avenue.



Visit the Think Blue San Diego website to learn more: **www.thinkblue.org** 

## COUNCIL DISTRICT 2: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT





#### **STORMWATER INFRASTRUCTURE IN** COUNCIL DISTRICT 2

Council District 2 encompasses the southern coastal communities within the City and includes many of the City's iconic waterways like the San Diego Bay, San Diego River, Mission Bay and the Pacific Ocean. The Stormwater Division works to safeguard these waters and protect San Diego from flooding by managing a vast, largely hidden stormwater infrastructure system. In Council District 2 alone, the Stormwater Division operates and maintains more than:

105	Miles of Storm Drain Pipe
8	Miles of Channels
2,200	Storm Drain Inlets
7.5	Miles of Levees
9	Pump Stations

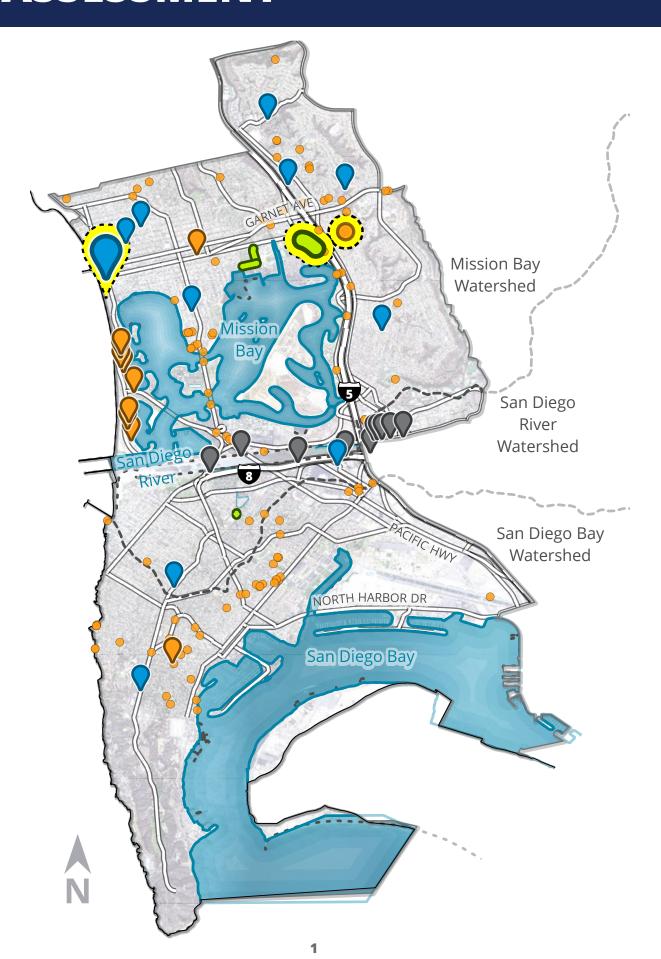


#### **PRE-STORM COMMUNITY FLOOD ASSESSMENT**

Each year the Stormwater Division performs a comprehensive infrastructure flood assessment prior to the rainy season to identify and evaluate locations of concern for failure or flooding so that an appropriate response strategy can be developed. These vulnerabilities are due to a number of causes, including a growing customer base, aging infrastructure, changing climate patterns that increase stress on the system, and long-standing, consistent underfunding.

A map presenting the locations and counts of vulnerabilities in Council District 2 to the right. To learn more about different types of stormwater system vulnerabilities, turn to Page 2.

known vulnerable locations will be funded in FY2021.



#### **KNOWN LOCATIONS**

**Pipe Failure** Locations

**Pipe Failure Bypass** Locations

**Channel Degradation** Locations

**Flooding Locations -Surface Drainage** 

**Levee Degradation** Locations

> **Highlighted locations are** presented in additional detail on Page 2 of this fact sheet.



Visit the Think Blue San Diego website to learn more: www.thinkblue.org

## COUNCIL DISTRICT 2: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT SNAPSHOT

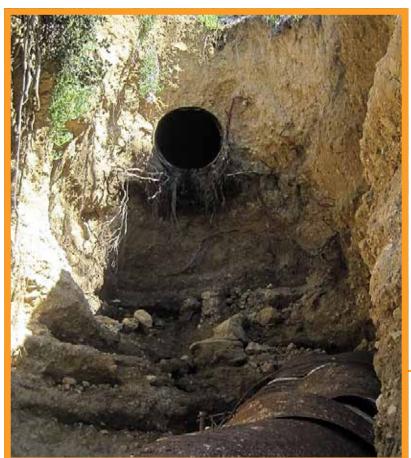


The FY2021 community flood assessment identified 145 vulnerable locations within Council District 2, including 4 channel degradation locations, 107 pipe failure locations, 10 pipe failure locations with bypass pumps being operated, 12 known flooding locations attributed to surface drainage issues, and 12 levee degradation locations.

Of these 145 vulnerabilities, only one, an emergency channel replacement along Mission Bay Drive, is anticipated to be addressed in FY2021 due to funding limitations.

The locations presented here are intended to demonstrate the types and extent of the vulnerabilities in Council District 2 as a snapshot in time for FY2021 (a full summary is presented on Page 1).

A completely detached storm drain pipe along Sioux Avenue is causing significant erosion.



### **Example Flooding - Surface Drainage** Location

The existing storm drain system near the intersection of Mission **Boulevard and Grand Avenue needs** to be increased in size to reduce the chance of flooding that currently occurs during rain events. The flooding poses a public safety risk when driving, walking, or biking and often enters nearby properties.



Flooding during rainfall at Mission Boulevard and Grand Avenue causes unsafe conditions for vehicles and pedestrians and often impacts nearby properties.



San Diego Bay

A pipe has broken and completely separated in the canyon adjacent to Sioux Avenue. The pipe failure has caused significant erosion along the slope, which if left unaddressed will continue to move towards adjacent homes.

**Example Pipe Failure** 

Location



Overgrown and dense vegetation has caused unwanted standing water and flooding (see SWD team member for scale).

#### **Example Channel Degradation Location**

This channel is located in Mission Bay Golf Course and is adjacent to Mission Bay Drive. Dense vegetation and sediment deposition are present in the channel and restricts the passage of water and causes flooding. This project will be maintained as an emergency project in FY2021.



Visit the Think Blue San Diego website to learn more: www.thinkblue.org

## COUNCIL DISTRICT 3: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT





#### **STORMWATER INFRASTRUCTURE IN** COUNCIL DISTRICT 3

Council District 3 encompasses some of the more urban neighborhoods within the City and runs along many of the City's iconic waterways like the San Diego Bay and the Pacific Ocean. The Stormwater Division works to safeguard these waters and protect San Diego from flooding by managing a vast, largely hidden stormwater infrastructure system. In Council District 3 alone, the Stormwater Division operates and maintains more than:

72	Miles of Storm Drain Pipe
2	Miles of Channels
2,300	Storm Drain Inlets
2	Pump Stations
1,800	Other Stormwater Structures (e.g., culverts, outfalls, basins, etc.)

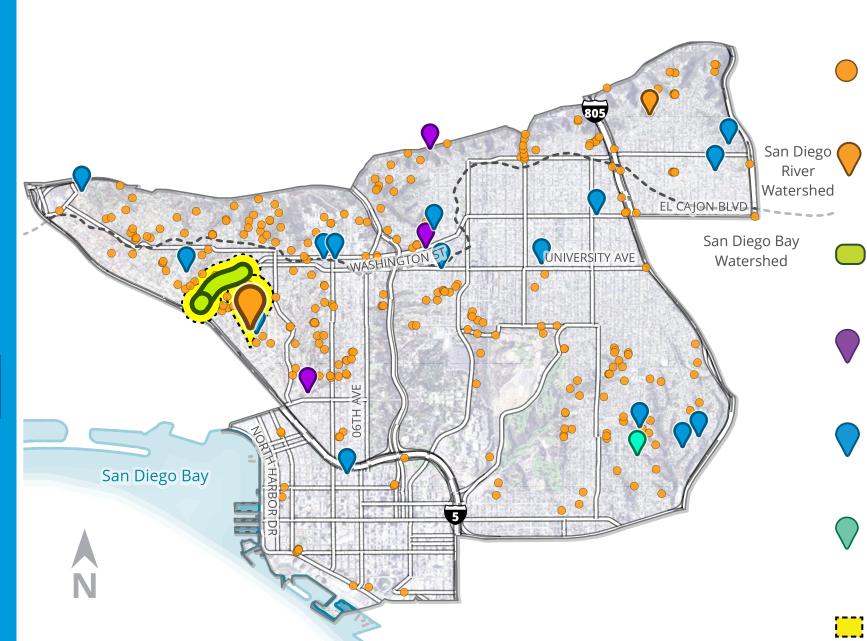


### PRE-STORM COMMUNITY FLOOD ASSESSMENT

Each year the Stormwater Division performs a comprehensive infrastructure flood assessment prior to the rainy season to identify and evaluate locations of concern for failure or flooding so that an appropriate response strategy can be developed. These vulnerabilities are due to a number of causes, including a growing customer base, aging infrastructure, changing climate patterns that increase stress on the system, and long-standing, consistent underfunding.

A map presenting the locations and counts of vulnerabilities in Council District 3 to the right. To learn more about different types of stormwater system vulnerabilities, turn to Page 2.

of the locations will be funded in FY2021.



#### **KNOWN LOCATIONS**

**Pipe Failure** Locations

**Pipe Failure Bypass** Locations

**Channel Degradation** Locations

**Structure Degradation** Locations

**Flooding Locations -Surface Drainage** 

**Drainage Ditch Degradation Location** 

**Highlighted locations are** presented in additional detail on Page 2 of this fact sheet.



## COUNCIL DISTRICT 3: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT SNAPSHOT



The FY2021 community flood assessment identified 316 vulnerable locations within Council District 3, including 2 channel degradation locations, 295 pipe failure locations, 2 pipe failure bypass locations, 15 known flooding locations attributed to surface drainage issues, 1 at-risk drainage ditch, and 3 at-risk stormwater structures.

Of these 316 vulnerabilities, only the two channel degradation segments along Washington Street are anticipated to be addressed in FY2021.

The locations presented here are intended to demonstrate the variability of the vulnerabilities in Council District 3 as a snapshot in time for FY2021 (a full summary is presented on Page 1).

San Diego Bay

Pipe failure has caused erosion and slope failure directly adjacent to residential properties

Overgrown and dense vegetation in the channel near West Washington Street restricts capacity and needs to be removed.

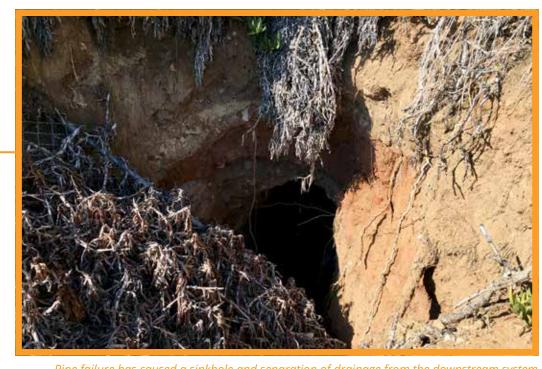


### Example Pipe Failure Bypass Location

A 25-foot portion of pipe along Kite Street has failed and separated from the downstream system at Jackdaw Street. The resulting flooding has caused erosion, slope failure and a sinkhole downstream. Bypass pumps have been operated at this location since March 2018. The permanent upgrade at this location has been fully designed; however, the project remains unfunded for construction.

### **Example Channel Degradation Location**

Channel maintenance is needed along West Washington Street in Mission Hills where two channel degradation segments will be maintained as one project. There are some structural concerns related to cracked concrete due to tree roots. In addition, dense and overgrown vegetation and sediment deposition are present in the channel and restrict the passage of water and cause flooding. This project will be maintained in FY2021.



Pipe failure has caused a sinkhole and separation of drainage from the downstream system.



Visit the Think Blue San Diego website to learn more: www.thinkblue.org

## COUNCIL DISTRICT 4: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT





#### **STORMWATER INFRASTRUCTURE IN** COUNCIL DISTRICT 4

Council District 4 encompasses some of the more urban neighborhoods within the City and contains portions of Chollas Creek, which ultimately drains to the San Diego Bay. The Stormwater Division works to safeguard these waters and protect San Diego from flooding by managing a vast, largely hidden stormwater infrastructure system. In Council District 4 alone, the Stormwater Division operates and maintains more than:

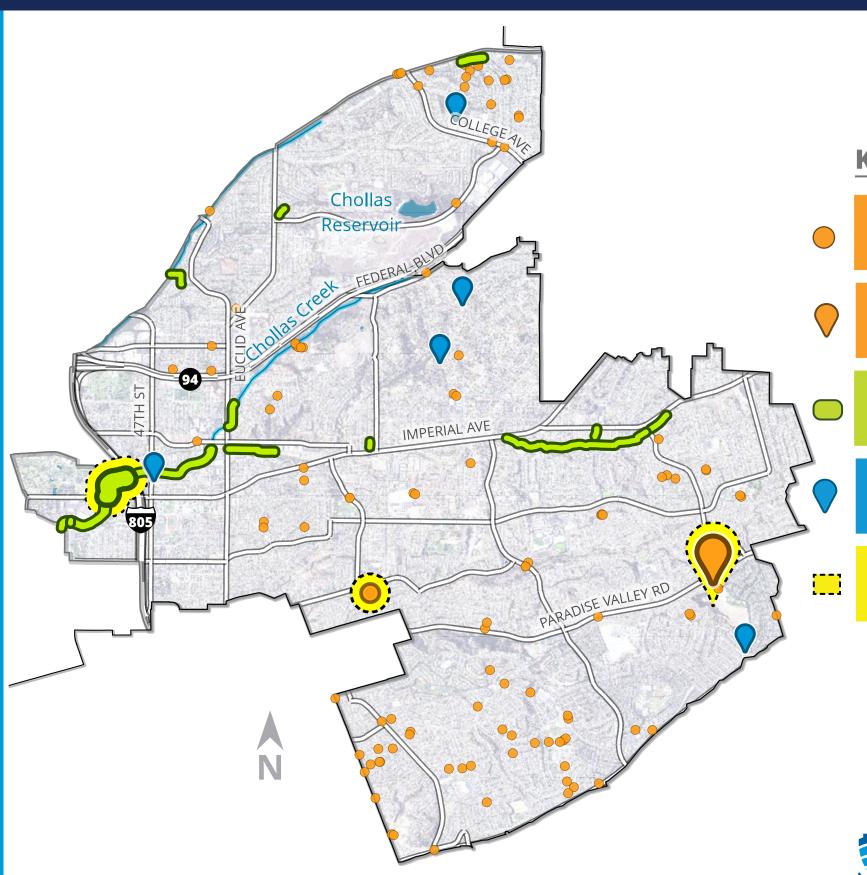
71	Miles of Storm Drain Pipe
14	Miles of Channels
1,680	Storm Drain Inlets
1,800	Other Stormwater Structures (e.g., culverts, outfalls, basins, etc.)

#### **PRE-STORM COMMUNITY FLOOD ASSESSMENT**

Each year the Stormwater Division performs a comprehensive infrastructure flood assessment prior to the rainy season to identify and evaluate locations of concern for failure or flooding so that an appropriate response strategy can be developed. These vulnerabilities are due to a number of causes, including a growing customer base, aging infrastructure, changing climate patterns that increase stress on the system, and long-standing, consistent underfunding.

A map presenting the locations and counts of vulnerabilities in Council District 4 to the right. To <u>learn more about different types of stormwater</u> system vulnerabilities, turn to Page 2.

known vulnerable locations will be funded in FY2021.



#### **KNOWN LOCATIONS**

**Pipe Failure** Locations

**Pipe Failure Bypass** Locations

**Channel Degradation** Locations

**Flooding Locations -Surface Drainage** 

**Highlighted locations are** presented in additional detail on Page 2 of this fact sheet.



Visit the Think Blue San Diego website to learn more: www.thinkblue.org

## COUNCIL DISTRICT 4: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT SNAPSHOT

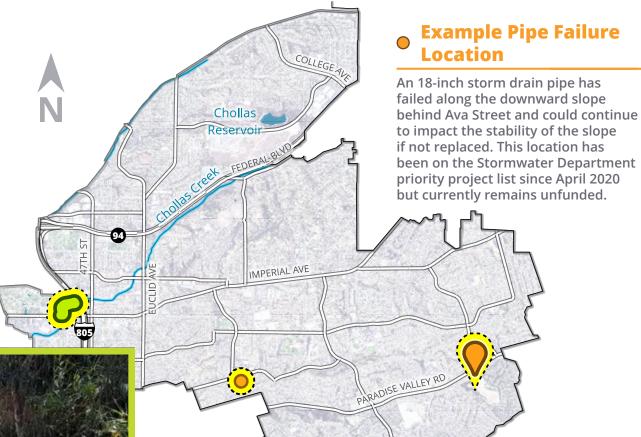


The FY2021 community flood assessment identified 145 vulnerable locations within Council District 4, including 15 channel degradation locations, 123 pipe failure locations, 1 pipe failure bypass location, and 6 known flooding locations attributed to surface drainage issues.

### None of these 145 vulnerable locations are currently funded for FY2021.

The locations presented here are intended to demonstrate the variability of the vulnerabilities in Council District 4 as a snapshot in time for FY2021 (a full summary is presented on Page 1).

Invasive vegetation in the channel restricts the passage of water and causes accumulation of trash and debris.





The failed storm drain near Ava Street has caused erosion and collapse of slopes that pose a safety risk.

#### Example Channel Degradation Location

Channel maintenance is needed in Chollas Creek between Imperial Avenue and Inland Freeway to remove vegetation and accumulated sediment, trash, and debris. Portions of the channel have cracking concrete due to tree roots, while other sections are earthen and have visible erosion due to high velocity flows. Maintenance and repair of this channel is anticipated in FY2023 if funded during the annual budget process.



Pipe failure at behind Prairie Mound Way has caused erosion and slope failures.

### Example Pipe Failure Bypass Location

Failure of a storm drain pipe behind Prairie Mound Way has caused slope failure along private property. The excess stormwater that flows down this slope due to the storm drain failure also has the potential to impact the stability of a downstream closed County of San Diego landfill. Bypass pumps have been operated at this location since September 2017 to reduce flows at this location. Permanent upgrades remain unfunded.



Visit the Think Blue San Diego website to learn more: **www.thinkblue.org** 

December 2020

- 2

## COUNCIL DISTRICT 5: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT





#### **STORMWATER INFRASTRUCTURE IN COUNCIL DISTRICT 5**

Council District 5 includes the communities in the northeast portion of the City of San Diego and includes local waterbodies like Lake Hodges, Los Peñasguitos Creek, and Santa Ysabel Creek that ultimately drain to Los Peñasquitos Lagoon, Mission Bay, the San Diego River and the Pacific Ocean. The Stormwater Division works to safeguard these waters and protect San Diego from flooding by managing a vast, largely hidden stormwater infrastructure system. In Council District 5 alone, the Stormwater Division operates and maintains more than:

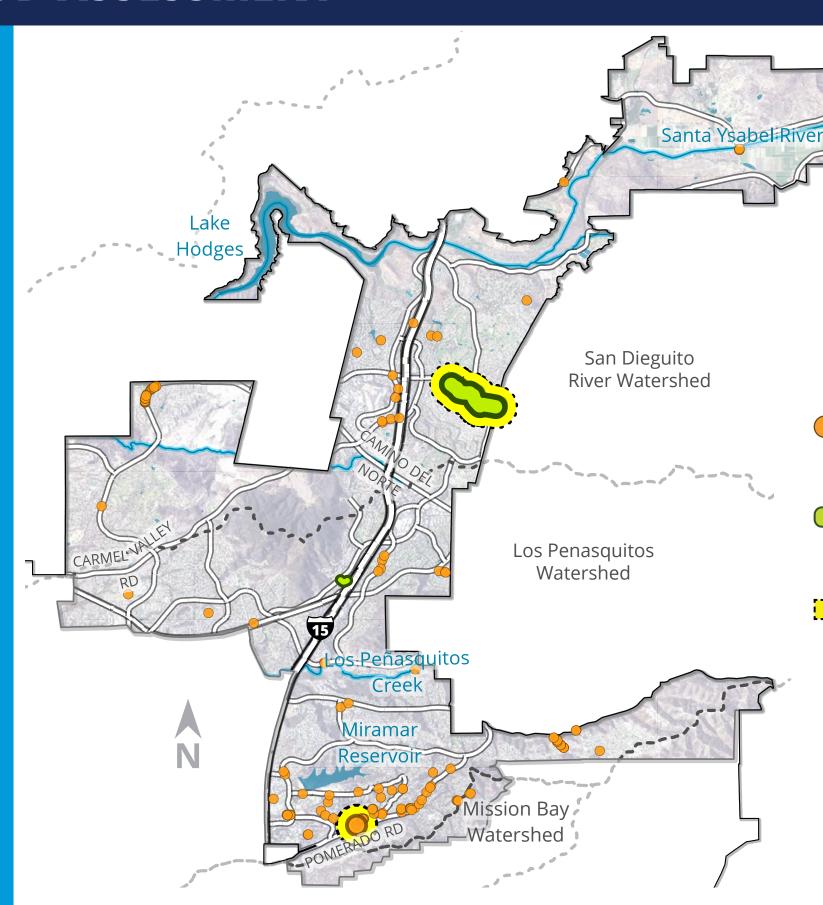
171	Miles of Storm Drain Pipe
2	Miles of Channels
3,700	Storm Drain Inlets
4,160	Other Stormwater Structures (e.g., culverts, outfalls, basins, etc.)

#### **PRE-STORM COMMUNITY FLOOD ASSESSMENT**

Each year the Stormwater Division performs a comprehensive infrastructure flood assessment prior to the rainy season to identify and evaluate locations of concern for failure or flooding so that an appropriate response strategy can be developed. These vulnerabilities are due to a number of causes, including a growing customer base, aging infrastructure, changing climate patterns that increase stress on the system, and long-standing, consistent underfunding.

A map presenting the locations and counts of vulnerabilities in Council District 5 to the right. To learn more about different types of stormwater system vulnerabilities, turn to Page 2.

known vulnerable locations will be funded in FY2021.



#### **KNOWN LOCATIONS**

**Pipe Failure** Locations

**Channel Degradation** Locations

**Highlighted locations are** presented in additional detail on Page 2 of this fact sheet.



Visit the Think Blue San Diego website to learn more: www.thinkblue.org

## COUNCIL DISTRICT 5: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT SNAPSHOT



The FY2021 community flood assessment identified 153 vulnerable locations within Council District 5, including 3 channel degradation locations and 150 pipe failure locations.

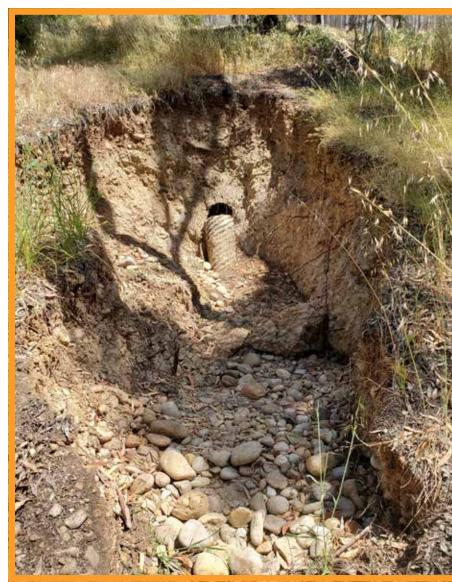
None of these 153 vulnerable locations are currently funded for FY2021.

The locations presented here are intended to demonstrate the variability of the vulnerabilities in Council District 5 as a snapshot in time for FY2021 (a full summary is presented on Page 1).

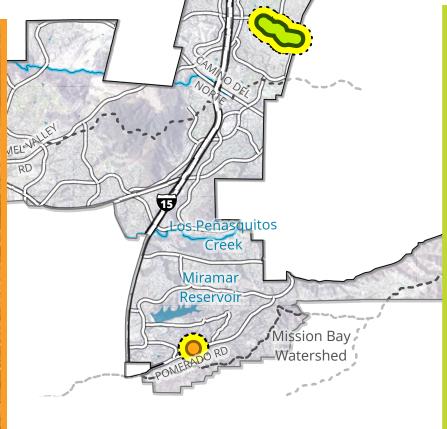


### Example ChannelDegradation Location

Channel maintenance is needed in Green Valley Creek near Pomerado Road to remove overgrown vegetation and accumulated sediment, trash, and debris. Portions of the channel have failed concrete segments that need to be replaced to prevent further degradation. Maintenance and repair of this channel is not currently funded.



The collapsed storm drain behind Negley Avenue has caused slope failure and poses a public safety risk.



#### Example Pipe Failure Location

An 18-inch storm drain pipe has failed at two different locations along the downward slope behind Negley Avenue. This impacted slope has caused instability to the surrounding area, including to the public park trail system in the canyon below the failure. This location has been on the Stormwater Department priority project list since May 2020 but currently remains unfunded.



The concrete channel bottom has collapsed and causes unwanted standing water as shown.



Visit the Think Blue San Diego website to learn more: **www.thinkblue.org** 

## COUNCIL DISTRICT 6: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT





#### **STORMWATER INFRASTRUCTURE IN COUNCIL DISTRICT 6**

Council District 6 encompasses the Mira Mesa, Miramar, and Clairmont Mesa neighborhoods within the City and ultimately drains to three different downstream waterbodies: Los Peñasquitos Lagoon, San Diego Bay, and the San Diego River. The Stormwater Division works to safeguard these waters and protect San Diego from flooding by managing a vast, largely hidden stormwater infrastructure system. In Council District 6 alone, the Stormwater Division operates and maintains more than:

**127** Miles of Storm Drain Pipe

4 Miles of Channels

**2.600** Storm Drain Inlets

Other Stormwater Structures (e.g., culverts, outfalls, basins, etc.)

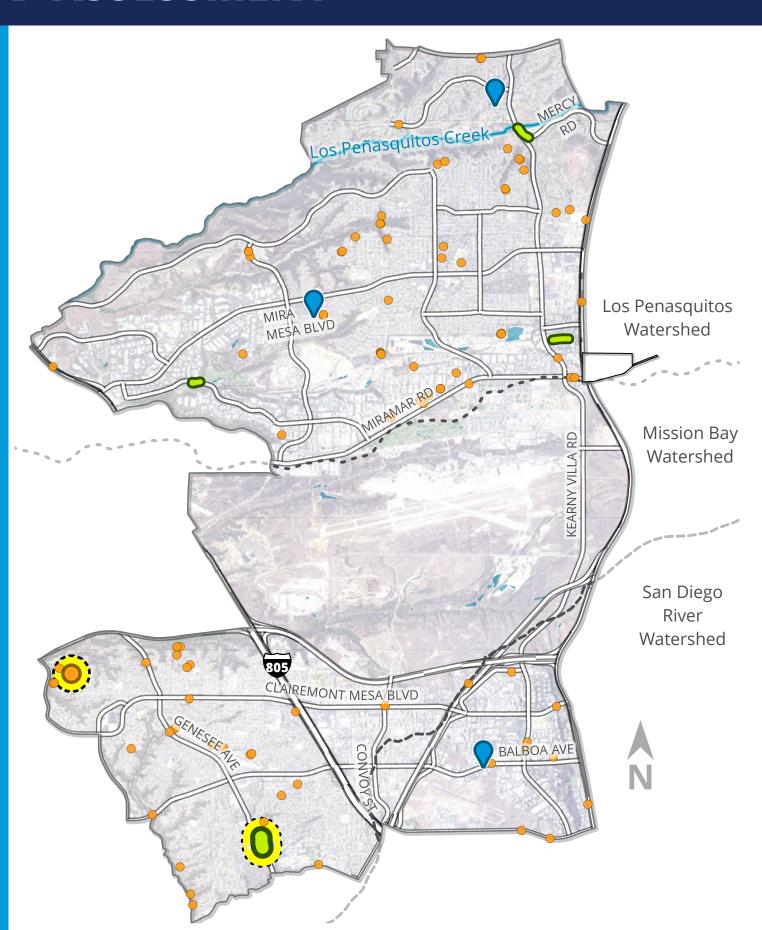


### PRE-STORM COMMUNITY FLOOD ASSESSMENT

Each year the Stormwater Division performs a comprehensive infrastructure flood assessment prior to the rainy season to identify and evaluate locations of concern for failure or flooding so that an appropriate response strategy can be developed. These vulnerabilities are due to a number of causes, including a growing customer base, aging infrastructure, changing climate patterns that increase stress on the system, and long-standing, consistent underfunding.

A map presenting the locations and counts of vulnerabilities in Council District 6 to the right. To learn more about different types of stormwater system vulnerabilities, turn to Page 2.

known vulnerable None of the locations will be funded in FY2021 funded in FY2021.



#### **KNOWN LOCATIONS**

**Pipe Failure** Locations

> **Channel Degradation** Locations

**Flooding Locations -Surface Drainage** 

**Highlighted locations are** presented in additional detail on Page 2 of this fact sheet.



Visit the Think Blue San Diego website to learn more: www.thinkblue.org

## COUNCIL DISTRICT 6: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT SNAPSHOT



The FY2021 community flood assessment identified 106 vulnerable locations within Council District 6, including 4 channel degradation locations, 99 pipe failure locations, and 3 known flooding locations attributed to surface drainage issues.

### None of these 106 vulnerable locations are currently funded for FY2021.

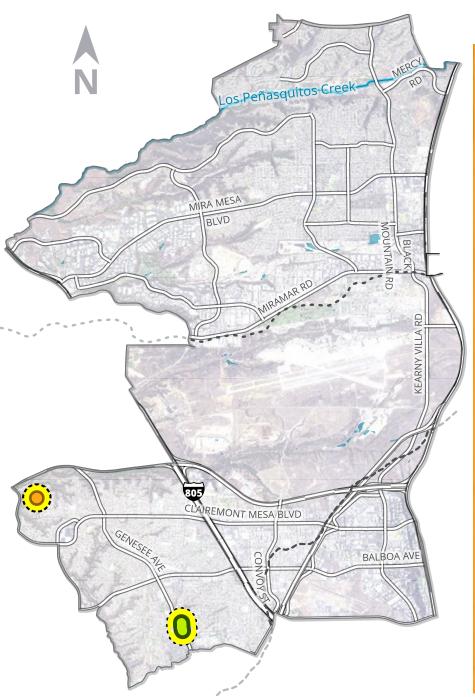
The locations presented here are intended to demonstrate the variability of the vulnerabilities in Council District 6 as a snapshot in time for FY2021 (a full summary is presented on Page 1).

#### Example Channel Degradation Location

Channel maintenance is needed in Tecolote Creek along Genesee Avenue to remove vegetation and accumulated sediment, trash, and debris that may cause flooding downstream. In addition, the culvert at the upstream portion has a failed pipe that needs to be replaced. Maintenance and repair of this channel is anticipated in FY2022 if funded during the annual budget process.



Dense vegetation as shown on the right side of the Channel along Genesee Avenue restricts the passage of water and causes accumulation of trash and debris.



The collapsed storm drain near Argonne Court has caused slope failure and poses a growing public safety risk.



#### Example Pipe Failure Location

An 24-inch storm drain pipe has failed along the downward slope behind Argonne Court and could continue to impact the stability of the slope and the adjacent areas. This location has been on the Stormwater Department priority project list since April 2020 but currently remains unfunded.



Visit the Think Blue San Diego website to learn more: www.thinkblue.org

## COUNCIL DISTRICT 7: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT





#### **STORMWATER INFRASTRUCTURE IN COUNCIL DISTRICT 7**

Council District 7 is located central to the City's boundaries to the west where many of the neighborhoods are directly along the San Diego River. The Stormwater Division works to safeguard San Diego's waters and protect from flooding by managing a vast, largely hidden stormwater infrastructure system. In Council District 7 alone, the Stormwater Division operates and maintains more than:

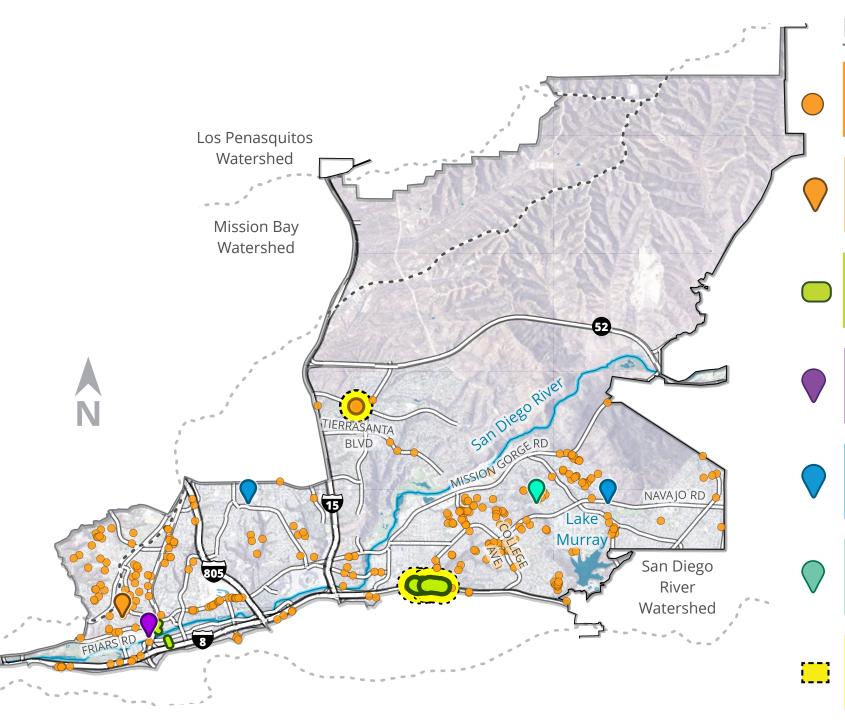
100	Miles of Storm Drain Pipe
12	Miles of Channels
2,200	Storm Drain Inlets
3	Pump Stations
2,170	Other Stormwater Structures (e.g., culverts, outfalls, basins, etc.)

### PRE-STORM COMMUNITY FLOOD ASSESSMENT

Each year the Stormwater Division performs a comprehensive infrastructure flood assessment prior to the rainy season to identify and evaluate locations of concern for failure or flooding so that an appropriate response strategy can be developed. These vulnerabilities are due to a number of causes, including a growing customer base, aging infrastructure, changing climate patterns that increase stress on the system, and long-standing, consistent underfunding.

A map presenting the locations and counts of vulnerabilities in Council District 7 to the right. To learn more about different types of stormwater system vulnerabilities, turn to Page 2.

known vulnerable locations will be funded in FY2021.



#### **KNOWN LOCATIONS**

**Pipe Failure** Locations

**Pipe Failure Bypass** Locations

**Channel Degradation** Locations

**Structure Degradation** Location

**Flooding Locations -Surface Drainage** 

**Drainage Ditch Degradation Location** 

**Highlighted locations are** presented in additional detail on Page 2 of this fact sheet.



Visit the Think Blue San Diego website to learn more: www.thinkblue.org

## COUNCIL DISTRICT 7: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT SNAPSHOT



The FY2021 community flood assessment identified 319 vulnerable locations within Council District 7, including 4 channel degradation locations, 309 pipe failure locations, 1 pipe failure bypass location, 2 known flooding locations attributed to surface drainage issues, 1 at-risk drainage ditch, and 1 at-risk stormwater structure.

Of these 319 vulnerabilities, the two channel degradation segments along Mission Gorge and the pipe replacement at Fitch Court are anticipated to be addressed in FY2021 (three locations total).

The locations presented here are intended to demonstrate the variability of the vulnerabilities in Council District 7 as a snapshot in time for FY2021 (a full summary is presented on Page 1).

Pipe failures along Clairmont Mesa Boulevard causes flooding during rain events that runs off of the side of the road and causes significant erosion.



A large portion of the slope along Clairmont Mesa Boulevard have been eroded due to flooding.

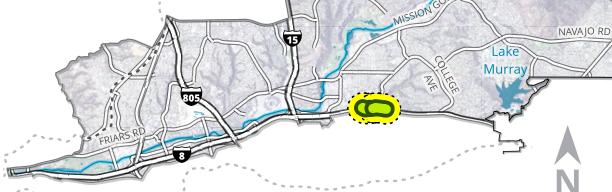




Broken concrete on the banks of Alvarado Canyon Creek needs to be repaired.



Channel maintenance is needed along Alvarado Canyon Creek near Mission Gorge Road to repair broken concrete at numerous locations along the channel banks. Invasive vegetation also needs to be removed to reduce the chance for flooding. This project, which consists of two channel degradation segments, will be maintained in FY2021.



#### Example Pipe Failure Location

The storm drain pipe and inlet at this location are too small to safely convey flows. As a result, the location floods during wet weather and has eroded the adjacent slope. Because this failure has not been funded, there are concerns about the structural integrity of the street. Stormwater improvements at this location have been needed since November 2014 and are not currently funded.



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## COUNCIL DISTRICT 8: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT





#### **STORMWATER INFRASTRUCTURE IN** COUNCIL DISTRICT 8

Council District 8 includes two geographically separate parts of the City that (1) run along San Diego Bay or (2) are along the United States and Mexico Border and ultimately drain to the Tijuana River. Across both of these areas in Council District 8, the Stormwater Division operates and maintains more than:

87	Miles of Storm Drain Pipe
10	Miles of Channels
2,000	Storm Drain Inlets
1	Pump Station
2,160	Other Stormwater Structures (e.g., culverts, outfalls, basins, etc.)

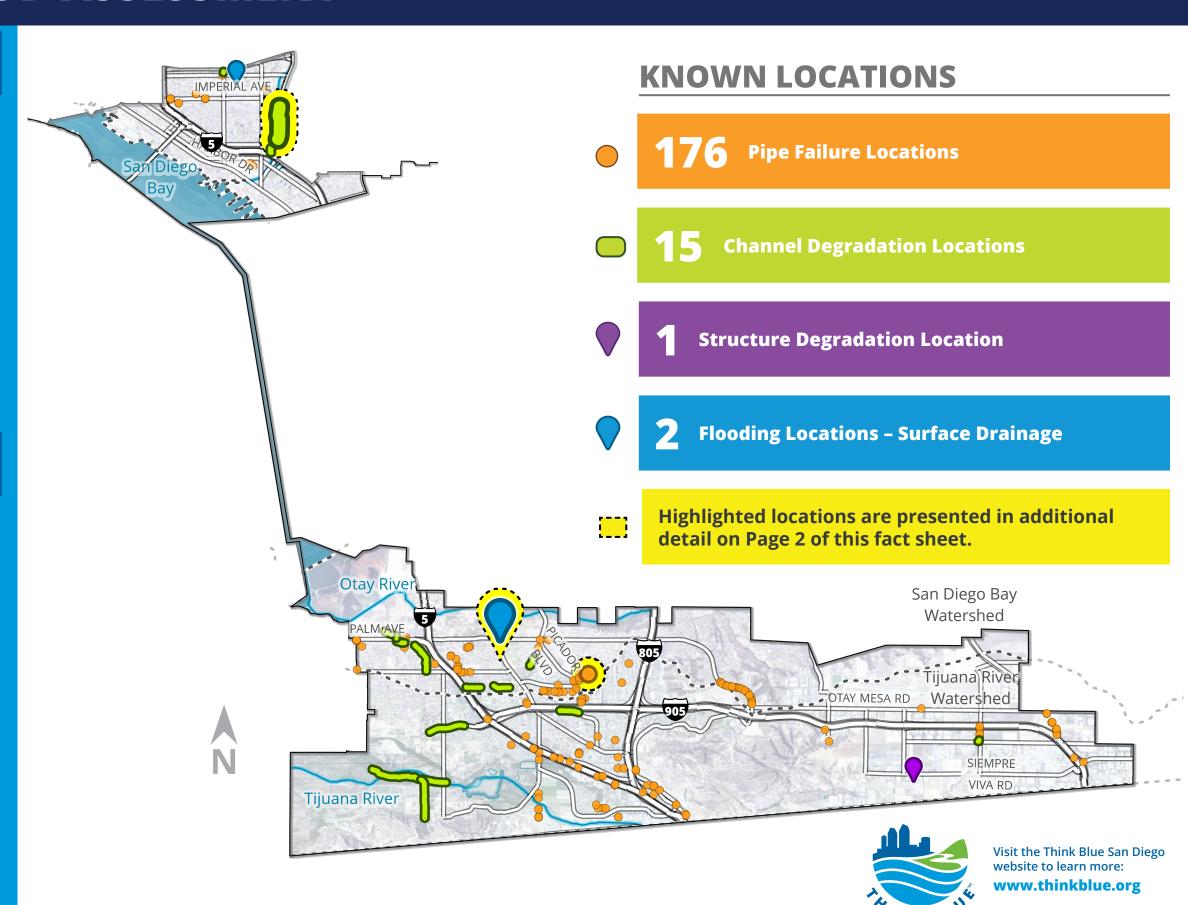


#### **PRE-STORM COMMUNITY FLOOD ASSESSMENT**

Each year the Stormwater Division performs a comprehensive infrastructure flood assessment prior to the rainy season to identify and evaluate locations of concern for failure or flooding so that an appropriate response strategy can be developed. These vulnerabilities are due to a number of causes, including a growing customer base, aging infrastructure, changing climate patterns that increase stress on the system, and long-standing, consistent underfunding.

A map presenting the locations and counts of vulnerabilities in Council District 8 to the right. To learn more about different types of stormwater system vulnerabilities, turn to Page 2.

known vulnerable locations will be funded in FY2021.



## COUNCIL DISTRICT 8: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT SNAPSHOT



The FY2021 community flood assessment identified 194 vulnerable locations within Council District 8, including 15 channel degradation locations, 176 pipe failure locations, 2 known flooding locations attributed to surface drainage issues, and 1 at-risk stormwater structure.

### None of these 194 vulnerable locations are currently funded for FY2021.

The locations presented here are intended to demonstrate the variability of the vulnerabilities in Council District 8 as a snapshot in time for FY2021 (a full summary is presented on Page 1).

Example Channel Degradation Location

Channel maintenance is needed near National Avenue to repair

Invasive vegetation and sediment also need to be removed to

improve flow capacity at this location, which has a history of

flooding. This project is not currently funded.

broken concrete at numerous locations along the channel banks.





#### Insufficient drainage at Palm Avenue and Beyer Boulevard causes significant flooding and is a public safety risk.

### **■ Example Flooding - Surface Drainage Location**

The existing storm drain system near Palm Avenue and Beyer Boulevard is undersized and causes flooding at the intersection and surroundings during rain events. Upgrades of the storm drain system are needed to prevent impacts to transit and nearby businesses.

Pipe failure has caused stormwater to bypass the stormwater system and causes ponding and potential flooding.



Broken concrete on the banks of the channel near National Avenue needs to be repaired.



#### **O** Example Pipe Failure Location

The existing storm drain pipe has failed along the slope at Aqua Park Court. As a result, stormwater currently discharges along the slope and down into the adjacent area and has the potential to cause flooding. Stormwater improvements at this location have been needed since December 2019 and are not currently funded.



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December 2020

2

## COUNCIL DISTRICT 9: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT





#### **STORMWATER INFRASTRUCTURE IN** COUNCIL DISTRICT 9

Council District 9 encompasses some of the more urban neighborhoods within the City and contains an extensive, largely underground stormwater system that drains to the San Diego River and San Diego Bay. In Council District 3 alone, the Stormwater Division operates and maintains more than:

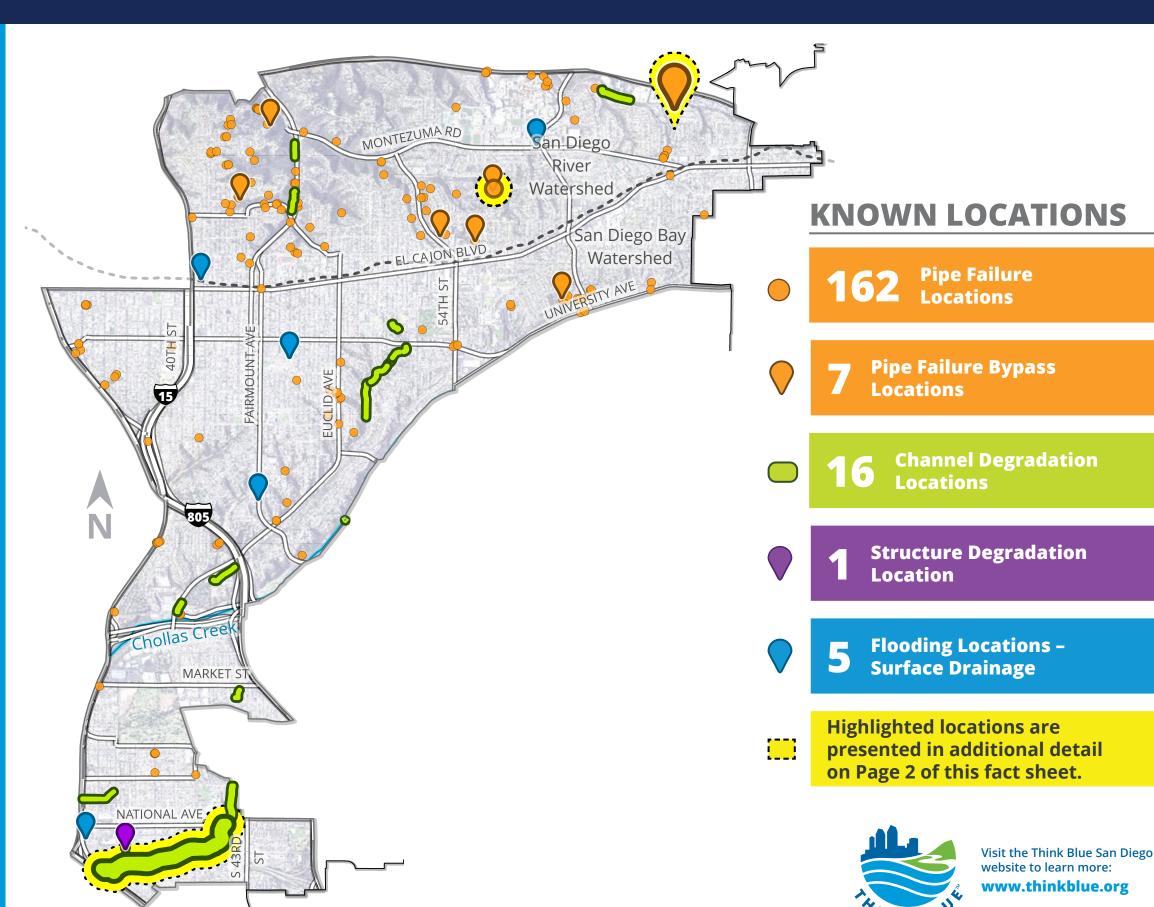
47	Miles of Storm Drain Pipe
9	Miles of Channels
1,300	Storm Drain Inlets
1,200	Other Stormwater Structures (e.g., culverts, outfalls, basins, etc.)

### PRE-STORM COMMUNITY FLOOD ASSESSMENT

Each year the Stormwater Division performs a comprehensive infrastructure flood assessment prior to the rainy season to identify and evaluate locations of concern for failure or flooding so that an appropriate response strategy can be developed. These vulnerabilities are due to a number of causes, including a growing customer base, aging infrastructure, changing climate patterns that increase stress on the system, and long-standing, consistent underfunding.

A map presenting the locations and counts of vulnerabilities in Council District 9 to the right. To learn more about different types of stormwater system vulnerabilities, turn to Page 2.

known vulnerable locations will be funded in FY2021.



## COUNCIL DISTRICT 9: FISCAL YEAR 2021 COMMUNITY FLOOD ASSESSMENT SNAPSHOT



The FY2021 community flood assessment identified 191 vulnerable locations within Council District 9, including 16 channel degradation locations, 162 pipe failure locations, 7 pipe failure bypass locations, 5 known flooding locations attributed to surface drainage issues, and 1 at-risk stormwater structure.

### None of these 191 vulnerable locations are currently funded for FY2021.

The locations presented here are intended to demonstrate the variability of the vulnerabilities in Council District 9 as a snapshot in time for FY2021 (a full summary is presented on Page 1).

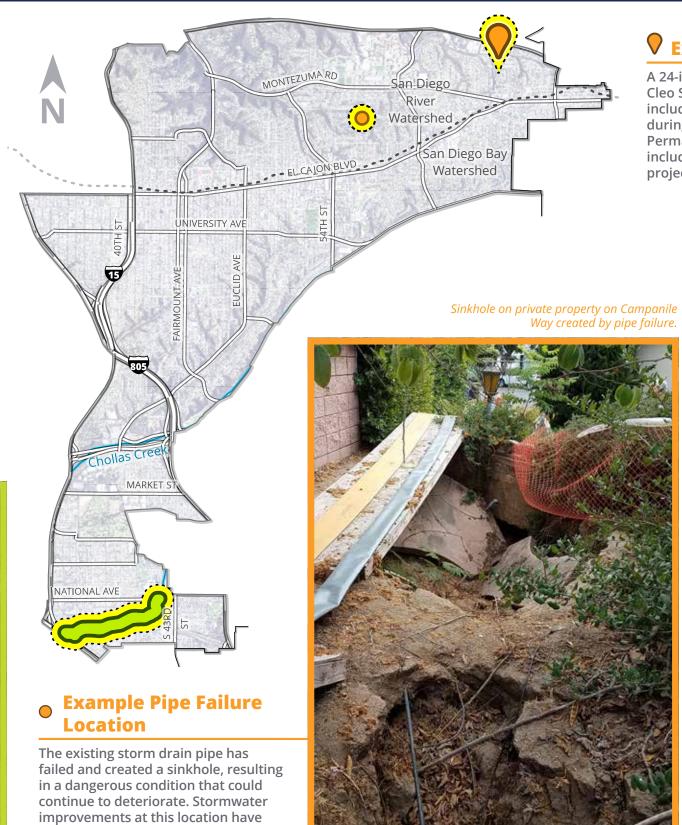
#### Example Channel Degradation Location

#### Channel maintenance is needed in South Chollas Creek near

Alpha Street to remove significant sediment accumulation and vegetation, which can lead to flooding. This channel has been a priority maintenance location for the Division since 2018; however funding and environmental permit limitations have resulted in postponement. The clearing of this channel is anticipated to be conducted in FY2022 if funded during the annual budget process.



Significant sediment deposition and overgrown vegetation restrict channel capacity in South Chollas Creek.



been needed since March 2017 and are

not currently funded.

#### Example Pipe Failure Bypass Location

A 24-inch storm drain pipe has failed on the slope near Cleo Street, resulting in impacts to downstream areas that include a hospital. Bypass pumps have been operated during rain events at this location since February 2017. Permanent upgrades at this location are needed and include replacement of the failed pipe; however, the project is not currently funded.



The exposed and failed storm drain pipe at Cleo Street has caused erosion and flooding in the surrounding area.



Visit the Think Blue San Diego website to learn more: **www.thinkblue.org** 

# APPENDIX C FUNDING STRATEGY IMPLEMENTATION ACTIONS UPDATE



### Appendix C: Funding Strategy Implementation Actions Update

Through the extensive research, analysis, and benchmarking conducted in the Funding Strategy, the SWD identified four implementation action categories:

- I. Maximize and accelerate implementation of efficiencies;
- II. Increase investment in SWD program innovation;
- III. Maximize existing funding sources, grants, and loans; and
- IV. Pursue development of a long-term dedicated funding mechanism.

Many of these actions are underway, with FY2022 progress presented below.

### Implementation Action I: Maximize and Accelerate Implementation of Efficiencies

A foundational element of both near-term and ongoing Funding Strategy implementation is reducing the SWD funding need through maximizing and accelerating implementation of efficiencies, including reducing or eliminating sources of pollution, using adaptive management practices, and optimizing O&M efforts. The SWD has committed to identifying and implementing efficiencies at all levels to ensure that funding is optimized for providing essential stormwater services. While two examples of efficiencies were highlighted in the Funding Strategy and are provided below, identifying and implementing efficiencies are included in daily O&M and planning.

#### Implementation progress and FY2022 and FY2023 milestones include the following:

- Pipe repairs: An additional in-house pipe-repair team was prioritized to be funded for FY2022 to accelerate the pace of more efficient and timely repairs for failing pipes. This dedicated pipe repair crew of 25 full-time employees is being hired and onboarded in Q2 FY2022.
- Optimizing street sweeping routes: The analysis of street sweeping routes and
  frequencies that was initiated in FY2021 in alignment with the Street Sweeping Audit is
  continuing in FY2022. The SWD will be reporting on the Street Sweeping Audit Response in
  December 2021 and is anticipating completing the analysis of recommended frequencies in
  Q1 FY2023.



### Implementation Action II: Increase Investment in SWD Program Innovation

The SWD is committed to investing in program innovation and strategically evaluating opportunities to advance its goals through innovative partnerships and other efforts. By implementing the Watershed Asset Management Plan (WAMP) 2.0, the SWD has been able to prioritize strategic, data-driven efforts and optimize day-to-day activities. In addition, the SWD has advanced programmatic efforts like the Alternative Compliance Program (ACP), stormwater harvesting and reuse, and integrated planning, with a focus on equity and resiliency.

#### Implementation progress and FY2022 and FY2023 milestones include the following:

- **Developing and implementing analytical tools:** The SWD developed a pilot data dashboard to track performance metrics and optimize real-time decision-making for the street sweeping and stormwater inlet/pipe cleaning programs in FY2021. In Q3 FY2022, the SWD plans to develop a comprehensive online dashboard, which will be implemented in Q2 FY2023.
- Alternative Compliance Program (ACP): Ongoing stakeholder engagement, including meetings of the ACP Technical Advisory Committee, is planned in Q2 FY2022. The draft Programmatic Environmental Impact Report for the ACP will be completed in FY2022, with anticipated public review and approvals Q1 Q3 FY2023 and program implementation targeted for Q4 FY2023.
- **Integrated planning:** The SWD will reengage the Regional Board Staff and conduct stakeholder outreach in Q2 Q4 FY2022. The framework will be further developed in FY2023, with necessary approvals from Regional Board and City Council.
- Stormwater harvesting and reuse: In partnership with the Public Utilities Department (PUD), the SWD is investigating opportunities to integrate stormwater capture activities to achieve both water quality and water supply goals by developing a comprehensive stormwater harvesting strategy. In FY2021, the SWD and PUD continued assessing feasibility of dry weather flow diversion and diversion of stormwater for indirect potable use and/or recycling to determine technical, regulatory, and high-level cost implications. Results suggested that urban runoff harvesting might be viable and cost competitive with other runoff management strategies in the City's Water Quality Improvement Plans (i.e., Green Infrastructure [GI]). Specifically, the results suggest a continuation of investment and planning for strategies that serve multiple benefits and in which the City is already investing (e.g., wetland restoration, small-scale on-site harvesting like rain barrels, GI, and dry weather diversion). In Q1 FY2022, SWD has identified 14 potential locations for diversion of dry and/or wet weather flows to the Pure Water system that could capture up to 8.6 million



gallons per day (MGD) in total. Of those 14 projects, the Carroll Canyon Creek Dry Weather Flow Diversion project has been advanced to Capital Improvements Program (CIP). This project would be the first full-scale example of strategic runoff harvesting coordinated with Pure Water and will enable the City to further explore the Citywide viability of this technology. The project will capture local runoff and help to restore sensitive habitat in the downstream Los Peñasquitos Lagoon. Other stormwater harvesting efforts that are underway and will be completed by the end of FY2022 include (1) developing proofs of concept for two to four prioritized dry- and wet-weather diversion to Pure Water opportunities, (2) strategically monitoring and analyzing urban runoff quality as an additional potential source of water, (3) directly engaging with regulators and environmental groups to overcome the specific regulatory constraints identified in FY2021, (4) continuing coordination between SWD and PUD to ensure urban runoff harvesting is integrated into Pure Water Phase II planning and design, and (5) conducting feasibility studies on two priority groundwater basins for potential groundwater recharge and recovery. Proofs of concept will be developed for one to three industrial wet weather locations in coordination with industry by the end of FY2023.

### Implementation Action III: Maximize Existing Funding Sources, Grants, and Loans

Several funding options that already support or exist as potential revenue sources for the SWD include funding sources subject to SWD or City discretion for allocation as part of the annual budget process and financing for CIPs, grants, and loans. The FY2022 approved budget includes \$115 million in funding for the SWD, inclusive of \$57 million from one-time capital funding sources like commercial paper, development impact fees, and a grant. Funding Strategy implementation updates are provided for options that could achieve cost recovery for the SWD, including revenue-generating activities, grants, and loans.

Additional efforts are ongoing, including tracking stormwater and infrastructure-related legislation at the state and federal level, and advocacy for stormwater as parts of funding and financing programs like WIFIA and CWSRF. For example, protecting natural water resources is a central priority of the Clean Water Act and the CWSRF; however, as noted in the April 18, 2021, CWSRF Intended Use Plan, California's CWSRF has executed more than \$11.9 billion in financial assistance agreements, of which approximately 97% have been awarded to publicly owned wastewater infrastructure. As such, the City should work with the State to pursue modifications to CWSRF to increase access to funding for stormwater programs as documented in the May 24, 2021, letter from the City to the

<sup>&</sup>lt;sup>1</sup> State Water Resources Control Board. 2021. *Clean Water State Revolving Fund and The Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Prop 1) and The California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access for All Act of 2018 (Prop 68) Intended Use Plan for State Fiscal Year 2021-2022.* <a href="https://www.waterboards.ca.gov/water-issues/programs/grants-loans/docs/2021-22">https://www.waterboards.ca.gov/water-issues/programs/grants-loans/docs/2021-22</a> cwsrf jup final draft.pdf.



State Water Resources Control Board (SWRCB) regarding adjustments to CWSRF scoring of stormwater projects to allow for greater parity.<sup>2</sup>

In addition, monitoring of policy and regulatory updates (e.g., source control provisions) and state and local ballot measures, are being closely coordinated and/or monitored as part of Funding Strategy implementation.

#### Implementation progress and FY2022 and FY2023 milestones include the following:

- Stormwater enforcement and fines: In FY2021, the SWD reassessed the monetary penalties matrix based on the type and severity of pollutant discharges and has identified increases to more severe pollutant types and egregious violations, such as sewage and automotive fluid spills. The monetary penalties matrix has not been updated since 2004, and proposed increases in penalty amounts are intended to serve as a deterrent to polluting behaviors that threaten water quality and human health risk. The SWD is planning to update the proposed monetary penalties matrix in Q2 FY2022 to route for review by the COO and stakeholder engagement in Q3 FY2022. The SWD plans to notify City Council of the update in Q4 FY2022, with the proposed monetary penalties anticipated for FY2023, if approved.
- Street sweeping parking enforcement fines: The SWD has continued evaluating potential options for street sweeping parking enforcement fines, including addition of posted routes, extension of enforcement zones, increase in frequency of sweeping, and/or increase in fine amounts in FY2021. Development of the approach is ongoing in FY2022, with stakeholder outreach anticipated in Q2 FY2022. Next steps on the implementation timeline will depend on the approach developed.
- **Stormwater Inspection and Reinspection Program:** In FY2021, potential approaches for the Stormwater Inspection Program to target cost recovery were initiated. Approach development has been ongoing with the identification of required approvals as part of the development. Once approved the program will be targeted to be implemented in FY2024.
- **Grants:** In FY2021, the SWD applied for 11 grants for four projects totaling \$34.1 million in requested funding. All 11 applications were unsuccessful. SWD staff have debriefed with the grant administering agencies on application competitiveness and adjustments that could be made in the future, which will be included into future applications as appropriate. The SWD was awarded a grant in FY2020 by the U.S. Department of Commerce's EDA for \$6.0 million for the Maple Canyon Restoration Project. In FY2022, the SWD is currently assessing six grants totaling \$20.4 million to consider for application. The SWD will continue to work with Government Affairs to identify and assess upcoming grant and loan opportunities that are emerging from recent State and Federal legislative actions, often with a focus on climate resiliency and drought preparedness.

<sup>&</sup>lt;sup>2</sup> City of San Diego. 2021. Letter to the State Water Resources Control Board. *City of San Diego Stormwater Projects 8610-110 and 8504-110.* 



- **State Budget Allocation:** The Southcrest Green Infrastructure Project has been identified in the Statewide Budget to receive an appropriation of \$3.1 million by the Department of Parks and Recreation to treat stormwater runoff entering Chollas Creek.
- Water Infrastructure Finance and Innovation Act (WIFIA): The SWD submitted a Letter of Interest for a Water Infrastructure Finance and Innovation Act (WIFIA) loan for high-risk pipe replacements, GI, revitalization and restoration of natural waterways, pump station upgrades, and rehabilitation of stormwater features. The subsequent loan application was submitted at the end of FY2021 for a loan amount of \$294 million, with the City matching 51% (or \$306 million). The City has been engaged in negotiations with the U.S. Environmental Protection Agency regarding loan specifics with loan execution potentially taking up to a year. The earliest that WIFIA funding is anticipated to be available to the SWD is late FY2022 or early FY2023.
- Clean Water State Revolving Fund (CWSRF): The SWD has also applied for CWSRF loans for South Mission Beach Storm Drain Improvements and Green Infrastructure project and Los Peñasquitos Lagoon Restoration Project in FY2020 and FY2019 respectively. Both projects were placed on the CWSRF Intended Use Plan. The South Mission Beach Storm Drain Improvements and Green Infrastructure project received City Council approval in an amount of \$27 million in FY2021. The SWD is planning to enter into a CWSRF loan pending City Council approval and successful negotiation of a loan agreement with the SWRCB for the Los Peñasquitos Lagoon Restoration project (\$27 million). The SWD is also continuing to explore additional CWSRF loan applications for large projects that protect natural waterways and anticipates submitting an application to finance various projects in December 2021.

# APPENDIX D STORMWATER FUNDING MEASURE CONSIDERATIONS



## Appendix D: Stormwater Funding Measure Considerations

In alignment with both Recommendation #6 and Council Resolution R-2021-306, the SWD is evaluating the viability of a stormwater-related funding measure. The considerations presented in this Appendix have been developed based on benchmarking of other stormwater funding measures and in coordination with the Office of the City Attorney, Department of Finance, City Treasurer, Debt Management, Department of Information Technology, Department of Engineering & Capital Projects, Public Utilities Department, Mayor's Office, County Assessor's Office, and other stakeholder groups. These considerations are preliminary in nature and are subject to further revisions if a stormwater funding measure is ultimately pursued. In addition, these considerations are not fully exhaustive and are focused on initial policy-based discussions. It should be noted that if a funding measure is pursued, the ultimate ballot title, ballot question, and ballot materials will be drafted by the City Attorney and are subject to City Attorney discretion.

#### **Ballot Question Tested in Public Opinion Research**

• Shall an ordinance improving/protecting water quality; reducing pollution, trash, toxins, plastics entering local waterways/bays/ocean/beaches impacting public health and marine life; capturing rain/stormwater for drought preparedness; preventing road damage from failed water pipes; establishing an annual [amount TBD] ¢ per square foot of impermeable area clean water parcel tax, raising approximately [amount TBD] annually until ended by voters, requiring audits, public disclosure of spending, local control, be adopted?

#### **Potential Funding Measure Components**

Additional funding measure components that could be included in supporting ballot materials should a funding measure be pursued are summarized below.

#### **Funding Measure Goals**

The SWD has collaborated with other City entities, community groups and stakeholders to develop funding measure program goals to reflect the vision for a stormwater system for all San Diegans' benefit in which (1) innovation and efficiency are the backbone of the approach to clean water and flood control; (2) infrastructure adapts to meet the needs of a growing population and changing climate to ensure people, homes, and businesses are safe from flooding; (3) stormwater is managed as a resource to promote equity, sustainability, and resilience; (4) water quality is a point of pride; and (5) the SWD protects, restores, and enhances waterways for local communities and wildlife for future generations. The City has proposed the following goals for a potential funding measure program:

a. Transition from reactive to proactive stormwater management.



- b. Improve public health by addressing pollutants in stormwater, increasing access to open space and increasing or enhancing recreational opportunities associated with or near the stormwater system and waterways.
- c. Improve and protect environmental water quality in San Diego streams, rivers, lakes, bays, and the ocean and meet regulatory requirements.
- d. Prioritize green infrastructure and nature-based solutions.
- e. Capture/harvest stormwater for local water supplies.
- f. Improve the sustainability, resilience, and livability of San Diego through adaptation and mitigation for climate change and urbanization.
- g. Restore the environment and revitalize waterways.
- h. Incorporate green spaces.
- i. Safeguard communities from flooding.
- j. Reduce stormwater system failures and emergencies.
- k. Maintain and upgrade existing stormwater infrastructure.
- I. Invest in infrastructure that provides multiple benefits, including reducing flood risk, improving water quality, capturing stormwater for use, and/or recreational and community amenities (e.g., bike paths, trails, and so forth).
- m. Promote innovation, scientific research, and utilization of new technologies and best practices.
- n. Incorporate source control practices.
- o. Encourage public partnerships and educate and engage residents, businesses and communities about stormwater.
- p. Generate green jobs and workforce development.
- q. Promote equity across the City and align with the Climate Action Plan 2.0.
- r. Leverage other funding and financing sources to maximize program benefits.
- s. Adopt an adaptive management process that accounts for iterative planning, monitoring, and performance evaluations.

#### **Special Parcel Tax Elements for Consideration**

- a. An annual special parcel tax that could be imposed upon parcels of property within the boundaries of the City at a rate of X cents per square foot *(to be determined)* of impermeable area, except as proposed to be exempted.
- b. Revenues could be placed in a dedicated, special fund.

D-2 DRAFT



#### **Potential Exemptions**

- a. Ad valorem property tax exempt properties could be exempt, including but not limited to, government parcels, public schools, and parcels owned by non-profit organizations satisfying the Revenue and Taxation Code Section 214.
- b. Upon application, low-income seniors could be exempted (where seniors is defined as 62 years or older in a single-family residence and low-income is defined in alignment with the California Department of Housing and Community Development thresholds that are published annually<sup>1</sup>).

#### Eligible and Ineligible Expenditures for Consideration

- a. Eligible expenditures and ineligible expenditures define what activities, program, and projects revenues from a funding measure can and cannot be spent on, respectively.
- b. Eligible expenditures could include, but would not be limited to, the following:
  - i. Operations and maintenance of the stormwater conveyance system, clean water projects, and other planned and future capital projects that support Program goals;
  - Upgrades or retrofits of existing stormwater infrastructure to incorporate new or enhanced elements to increase performance, including connected right-of-way improvements;
  - iii. Capital projects that support Program goals, including green infrastructure, naturebased solutions, pipes, channels, pump stations, diversions, stormwater capture facilities, among others;
  - iv. Multi-benefit projects that provide a clean stormwater benefit and use stormwater as a resource;
  - v. Capital project development tasks, including but not limited to feasibility studies, planning, design, preparation of environmental documents, permits, construction, inspection, monitoring, and similar activities;
  - vi. Scientific and technical studies, including modeling and monitoring;
  - vii. Regional stormwater projects located outside of the City's jurisdictional area that contribute towards or benefit the Program goals;
  - viii. Habitat restoration and revitalization projects;
  - ix. Water quality and regulatory compliance activities including but not limited to planning, monitoring, reporting, studies, among others;
  - x. Projects that include innovative technologies and methods to support Program goals;
  - xi. Elements of stormwater projects that also provide community benefits like walkways, lookouts, habitat enhancements, recreation areas;
  - xii. Programs that include education and engagement related to stormwater, including with schools, the general public, and industrial and commercial facilities, among others;
  - xiii. Local workforce job training;

D-3 DRAFT

<sup>&</sup>lt;sup>1</sup> California Department of Housing and Community Development. 2021. State Income Limits for 2021. https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits/docs/income-limits-2021.pdf



- xiv. Real property and easement acquisition necessary for project implementation, construction, or maintenance;
- xv. Administration of the Program and Special Parcel Tax;
- xvi. Debt financing should the City determine that bonds, loans, or other financing mechanisms are necessary for implementation of the Program.
- b. Ineligible expenditures may include:
  - i. Fines or penalties imposed by any regulatory agencies (State, Federal or local);
  - ii. Any expenditures associated with regulatory permit violations, notice of violations, or noncompliance with regulations that are brought forth by regulatory agencies (State, Federal, or local) or third parties;
  - iii. Any expenditures associated with claims or actions against the City, or their employees related to improper use, allocation, or withholding of Special Tax Revenues;
  - iv. Costs associated with any litigation, including investigation, defense, or attorneys' fees, related to design or implementation of projects or programs funding by the Special Parcel Tax;
  - v. Payments of settlements or judgements related to any claim or lawsuit arising in connection with projects or activities funded under the Program.

#### **Discounts**

- a. Discounts for ratepayers can be included to reduce the tax bill and account for variability in the ratepayer base, affordability, or equity.
- b. A general income-based tax reduction program could be developed and implemented in coordination with stakeholders. Details, including implementation procedures and guidelines for the potential program are being evaluated to ensure they are consistent with the purpose and goals of the program, if pursued.

#### Credits, Incentives and/or Adjustments

- a. Adjustment programs, which may include credits, rebate, or incentives, allow for modifications in bills to incorporate considerations that could include onsite improvements, landowners that have their own stormwater system or treatment, and those that have their own MS4 Permits, among other considerations.
- b. An adjustment program could be permissible under the measure. Specifics for the potential program are under consideration.

#### Citizen's Oversight Committee

- a. A Citizen's Oversight Committee could be created specifically for the funding measure (e.g., not incorporated into existing oversight or rate committees).
- b. The potential membership, scope, and responsibilities are being evaluated and could be defined following the potential passage of the measure as part of an implementation ordinance.

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#### **Implementation Plans**

a. Stormwater Investment Plans could be developed by the City for eligible projects and programs to outline how existing and projected funds would be allocated at the Citywide level.

#### **Independent Audits**

a. An independent audit could be conducted by the City's Independent Auditor to assess expenditures and activities to date, financial data, and performance data.

#### Authorization of Debt and Issuance of Bonds

- a. Voter approval is required to issue debt (bonds, loans) payable from and secured by the revenues associated with a potential funding measure.
- b. The measure could establish the ability to issue debt and repay debt against revenues generated by the funding measure as an eligible expenditure and provide authority if needed per the City Municipal Code.

#### **Appeals Process**

a. The City could establish and administer an appeals process to address and correct errors. Specifics are being evaluated and could be defined following the potential passage of the measure as part of an implementation ordinance.

#### **Annual Reporting**

- a. The City could develop and submit an annual report for the funding measure describing:
  - i. revenues collected during the fiscal year;
  - ii. revenues expended for eligible expenditures during the fiscal year;
  - iii. the status of all activities required or authorized to be funded.

#### **Annual Budgets**

a. An annual budget could be developed by the City that itemizes the eligible expenditures budgeted for the upcoming fiscal year. The budget may not need to authorize expenditures of all available revenue for the upcoming fiscal year to reserve a portion of the budget for long-term planning or financing.

# APPENDIX E PUBLIC OPINION RESEARCH FINDINGS



TO Bethany Bezak, City of San Diego

FROM FM3 Research

**RE:** Key Findings from Voter Surveys Assessing a Potential Stormwater Funding Measure

DATE September 24, 2021

In December 2020, March 2021, and August 2021, Fairbank, Maslin, Maullin, Metz & Associates (FM3) conducted three surveys among voters in the City of San Diego regarding a measure to provide funding for stormwater infrastructure, based on the strong sense of need for additional funding for this purpose and high levels of importance of the funding priorities and outcomes of such a measure. This memo summarizes key findings from the surveys.

Nearly two-thirds of San Diego voters likely to vote in the November 2022 election would support a possible ballot measure to fund stormwater infrastructure improvements through a parcel tax with a rate of either 4¢ or 5¢ per square foot (SF) of impermeable area (Figure 1). In the March 2021 survey, 66% of frequent voters likely to vote in November 2022 supported the potential measure with a 4¢ rate, 29% opposed it, and 5% were undecided. In the August 2021 survey of likely November 2022 voters, 63% supported the potential measure with a 5¢ rate, compared to 28% who opposed and 9% who were undecided. These results show that the potential proposal—which would require a two-thirds supermajority for passage under Proposition 218—is potentially viable, with further planning, as a ballot measure in an upcoming election.

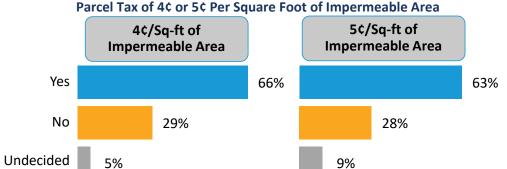


Figure 1: Opinions on Potential Ballot Measure to Fund Stormwater Infrastructure with



Notably, in both surveys, responses in support of the measure is broad across demographic groups, including both homeowners and renters; among different age groups, racial/ethnic groups, and genders; and in the various geographic areas of the City.

A strong majority of voters agree that the City of San Diego needs more funding to maintain its storm drain system. Three-quarters of respondents also recognized the need for funding to clean and protect local water quality (Figure 2). In the December 2020 survey, 61% of respondents said the City has either a "great need" or "some need" for additional funds to maintain its storm drain system. An additional 11% said the City has "a little need" for additional funding, while less than 10% said the City had "no real need." Notably, 18% of respondents said they did not know about the City's need for additional funding to maintain its storm drain system, indicating an opportunity for public outreach and communication. Further, voters even more clearly recognize the need for funding to clean and protect local water quality. Seventy-five percent of voters said the City had a "great need" or "some need" for funding to clean and protect local water quality, with nearly 40% describing the need as "great." Just 14% said the City had "a little need" or "no read need," with 11% who were unsure.

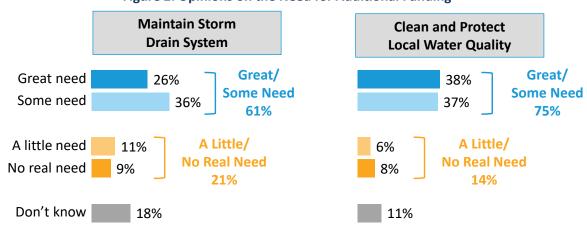


Figure 2: Opinions on the Need for Additional Funding

Very large percentages of San Diego voters consider important many of the funding priorities and outcomes that could be achieved through this measure (see Figure 3). The five highest rated priorities, with more than 80% of respondents rating them as "very important" or "important" (a 6 or 7 on a scale of 1 to 7), included:

- "Protecting the local supply of clean drinking water" (87%)
- "Keeping trash, liquid toxins, and pharmaceuticals out of our creeks, bays, lagoons and coastal waters, and off of our beaches" (82%)
- "Maintaining the highest possible standards of water quality" (82%)
- "Improving and protecting water quality" (80%), and
- "Reducing pollution, trash, toxins/plastics entering local waterways, bays, oceans (and) beaches impacting public health and marine life" (80%).



Other highly rated priorities included "Protecting marine life" (78%), "Protecting public health" (75%), "Preparing for future droughts" (74%), and "Increasing safe drinking water supplies" (74%). Taken together, they show the high level of interest in funding the varied goals and purposes of a potential ballot measure.

Figure 3: Priorities for San Diego Stormwater Ballot Measure

Priorities	% "Very Important" or "Important"
Protecting the local supply of clean drinking water	87%
Keeping trash, liquid toxins, and pharmaceuticals out of our creeks, bays, lagoons, and coastal waters and off of our beaches	82%
Maintaining the highest possible standards of water quality	82%
Improving and protecting water quality	80%
Reducing pollution, trash, toxins/plastics entering local waterways, bays, oceans (and) beaches impacting public health and marine life	80%
Protecting marine life	78%
Protecting public health	75%
Preparing for future droughts	74%
Increasing safe drinking water supplies	74%
Capturing rain and stormwater for drought preparedness	69%
Preventing damage to roads from failed water pipes	67%
Maintaining pipes and channels that carry stormwater	66%
Preventing potholes, sinkholes, and flooding due to failed stormwater infrastructure	66%
Preventing flooding of streets, homes and businesses	66%



The March 2021 survey also tested the same potential ballot measure funded instead by a parcel tax with different rates based on property type—\$89 per single-family residence, \$69 per multifamily residence, and \$500 for other property types. While the potential measure received majority support, it did not reach the two-thirds supermajority necessary for passage (see Figure 4). Fifty-six percent of likely November 2022 voters said they would support this potential measure. With the requirement of a two-thirds vote for passage, however, a measure with a funding mechanism of this type is likely not viable in the near-term.

\$89 Single-Family Residences; \$69 Multi-Family Residences; \$500 Other Properties

Yes

No

39%

Undecided

5%

Figure 4: Opinions on Ballot Measure to Fund Stormwater Infrastructure Funded with

#### **Conclusions**

A strong majority of City of San Diego voters support a potential ballot measure to provide funding to improve stormwater infrastructure and other aspects of stormwater management through a parcel tax of either 4¢ or 5¢/SF of impermeable area. This support is broad and crosses demographic and geographic subgroups throughout the City. The surveys also indicate that education on stormwater issues is important so that residents can be more fully informed when making their decision as to whether to support a potential measure in the future.

Survey Methodology: This memo includes the results of three surveys of City of San Diego registered voters. Two surveys – those conducted in December 2020 and March 2021 – included respondents with a voting history that makes them likely to vote in the November 2024 election, a subset of whom have a voting history that also makes them likely to vote in the November 2022 election. Results of these surveys are presented of respondents likely to vote in November 2024 except where indicated. The survey conducted in August 2021 only included respondents with a voting history that makes them likely to vote in the November 2022 election. All three surveys used a combination of online and telephone interviewing.

<sup>1)</sup> December 2–9, 2020: 1,034 interviews with Likely November 2024 voters; margin of sampling error of ±3.3% at the 95% confidence level.

<sup>2)</sup> March 18–25, 2021: Results on the potential ballot measure questions are based on 362 interviews with likely November 2022 voters; margin of sampling error of ±5.2% at the 95% confidence level. Higher margins of error for subgroups.

<sup>3)</sup> August 15-25, 2021: Results on the potential ballot measure questions are based on 1,102 interviews with likely November 2022 voters; margin of sampling error of ±3.1% at the 95% confidence level. Higher margins of error for subgroups.